R.D.F. HANDBOOK

JETFIGHTER III

PUBLISHED BY MISSION STUDIOS CORPORATION

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Version 1.2

A MISSION STUDIOS PRODUCTION

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U.N. Rapid Deployment Force
Civilian Command
1644 Colonial Pkwy.
New York, New York, U.S.A.

TO: RDF Pilots

You have been chosen to be a member of the United Nations' Rapid Deployment Force. The RDF is an elite strike force based aboard the U.N.S. Peacekeeper, a Nimitz-class nuclear aircraft carrier. This briefing dossier will fill in the other details of your assignment.

The Rapid Deployment Force will be sent to hotspots around the world to protect against aggression. Your objective in these engagements is straightforward — to secure global peace using any means necessary, including deadly force.

Besides yourself, this squadron of pilots has been chosen to serve in the RDF from countries spanning the entire Earth. The team has been carefully selected based upon proven combat skill and experience. You are the best that the world has to offer and represent our highest hopes for keeping the peace.

The remainder of this handbook will provide you with additional information on your position, background, and duties. Other confidential information will be provided to you on a need-to-know basis. Make sure you read this document very carefully. It could save your life.

Good luck,

Holden Kohl

Holden Kohl
Civilian Commander

INSTALLATION

JetFighter III is easy to install and run. However, it is important to be sure that you have the proper equipment and enough free disk space. Please carefully follow the installation instructions below. If you have any difficulties, please consult the Troubleshooting section in the Customer Information chapter before pursuing other options.

SYSTEM REQUIREMENTS

JetFighter III will run on most new personal computers. Below is a list of the computer equipment required to run the game:

- IBM compatible computer with a 486/66 MHZ or better processor (Pentium 120 recommended)
- 8 MB of system RAM (12 MB required to run hi-res)
- DOS 5.0 or better operating system
- CD-ROM drive with DOS driver software loaded
- Hard disk drive with at least 30 MB of free space
- VESA compatible SVGA graphics card and monitor

The following are also supported by JetFighter III:

- Windows95 in DOS mode
- Microsoft compatible mouse and driver
- Most joysticks
- Most sound boards and speakers
- rudder pedals
- throttle controls
- the CH Force F/X joystick

INSTALLATION

Before you install JetFighter III, please be sure you have met all the computer system requirements listed above. If you are not sure that you have the correct equipment, you may want to ask your computer dealer. To begin the installation, follow these instructions below. These examples assume that your CD-ROM drive is "D."

Installing in DOS:

- Turn on your computer if it is not already on.
- Make the CD-ROM drive the current drive: **D: [Enter]**
- Run the install program: **INSTALL [Enter]**
- Follow the directions below for Setup Sounds, Setup Joystick, and Install to Hard Disk

Installing in WINDOWS 95:

- Turn on your computer if it is not already on.
- Once in Windows 95, place the JetFighter III CD into your CD-ROM drive.
- Wait a few seconds for WINDOWS 95 to automatically detect the CD
- When the JF3 image appears, click on INSTALL
- Follow the directions below for Setup Sounds, Setup Joystick, and Install to Hard Disk.
- If there is no Autoplay detection, click on the "My Computer" icon and then click on the "JetFighter 3" CD icon.

Note: *If you must manually load a VESA driver, exit to DOS, run your VESA driver, then follow the directions above for installing in DOS. To fully exit to DOS from WINDOWS 95:*

- Click on the START button
- Click on SHUT DOWN
- Select RESTART THE COMPUTER IN MS-DOS MODE

JetFighter III will create and install the program into the C:\JF3 directory or one that you select. Please watch for errors as the install program runs. The most common cause of trouble is not having enough available space on the hard drive.

If you have any trouble installing the program, you may want to make sure that your computer system has:

- Hard disk drive with at least 30 MB of free space
- CD-ROM drive is working and the drivers are loaded.
- 500K free conventional RAM
- Either DOS or WINDOWS 95 operating system
- VESA compatible SVGA graphics card and monitor

However, if the problem persists, you should consult the Troubleshooting section in the Customer Information chapter.

DETAILED INSTALLATION INSTRUCTIONS

SETUP SOUNDS

This menu will let you set up your digital sound effects device. If you know what brand of sound card you have and the current settings, follow the steps below. You can also use the AUTO-DETECTION option. If your computer locks up during auto-detection, reboot your machine and configure your sound card manually. To do this, click on "Install" in JF3 Folder in Windows95 or type "Install" at the \JF3 prompt.

Manual Configuration:

- Use the "Prev Card" and "Next Card" buttons to find your sound card. Click on "CONTINUE" when done.
- Use the "I/O Port" button to select the proper I/O Port.
- Use the "IRQ" button to select the proper Interrupt Request line.
- Use the "DMA" button to select the proper DMA channel.

  If you don't know these values, please contact the manufacturer of your computer or sound card for more help. You can also select NO SOUND CARD and re-configure the game later.
- Click on "CONTINUE" when done. You will be taken to the test menu.
- Click on "TEST" to hear if your sound card is configured properly. Click on "CONTINUE" if you hear the radio chatter or "CANCEL" to reconfigure your sound card. Be sure your speakers are turned on and plugged in properly!

MUSIC DEVICE SETUP

This menu will let you set up your digital music device. If you know what brand of sound card you have and the current settings, follow the steps below. You can also use the AUTO-DETECTION option. If your computer should lock up during auto-detection, reboot your machine and configure your sound card manually.

Manual Configuration:

- Use the "Prev Card" and "Next Card" buttons to find your sound card. Click on "CONTINUE" when done.
- Use the "I/O Port" button to select the proper I/O Port.

  If you don't know these values, please contact the manufacturer of your computer or sound card for more help. You can also select NO SOUND CARD and re-configure the game later.
- Click on "CONTINUE" when done. You will be taken to the test menu.
- Click on "TEST" to hear if your sound card is configured properly. Click on "CONTINUE" if you hear the music or "CANCEL" to reconfigure your sound card.

SETUP JOYSTICK

JetFighter III supports a wide variety of joysticks. You can use the setup program to configure JetFighter III to best use the features of your particular joystick.

- Use the "PREV" and "NEXT" buttons until your joystick appears on the screen.
- If you can't find your joystick, use "GENERIC 2 BUTTON" or "GENERIC 4 BUTTON". They will work with most basic sticks.
- When finished, press "CONTINUE".
- You must calibrate your joystick the first time you fly in JetFighter III. Press "CONTINUE" again after reading the calibration instructions.

INSTALL TO HARD DISK

This will copy the necessary JetFighter III files from the CD to your hard drive.

- Click on "CONTINUE" to install to the default drive and directory. To change this default, click on the directory or hit **[spacebar]**.
- Click on "CONTINUE" after the installation is complete.
- Any last minute changes or additions to JetFighter III will be included in this README document. Use "UP" and "DOWN" to navigate through this information. Click on "DONE" then "EXIT" to complete the installation process.

RUNNING JETFIGHTER III

After you have successfully installed the game, you will probably be eager to give it a try. Below is all you need to do to run the game. These examples are for people who installed JetFighter III to the default drive and directory C:\JF3:

From DOS:

- Turn on your computer if it is not already on.
- Place the JetFighter III CD into your CD-ROM drive.
- If necessary, switch to the drive where JF3 was installed: **C: [Enter]**
- Switch to the directory where JF3 was installed: **CD\JF3 [Enter]**
- Run the program by typing: **JF3 [Enter]**

From WINDOWS 95:

- Turn on your computer if it is not already on.
- Place the JetFighter III CD into your CD-ROM drive.
- WINDOWS 95 will automatically detect the CD.
- The JF3 menu will then appear.
- Click on the "Fly" button.
- If there is no Autoplay detection, click on the "My Computer" icon and then click on the "JetFighter 3" CD icon.

  REMEMBER: If you operate in WINDOWS 95, the best way to run JetFighter III is to restart your computer to MS-DOS MODE.
  - Click on the START button
  - Click on SHUT DOWN
  - Select RESTART THE COMPUTER IN MS-DOS MODE

However, you may run JetFighter III from the MS-DOS PROMPT under WINDOWS 95. Please consult the Troubleshooting section in the Customer Information chapter for further explanation.

If you have trouble running the game, please consult the Troubleshooting section of the manual in the Customer Information chapter. Most problems are relatively easy to fix. This section will help you solve these problems.

RUNNING JETFIGHTER III–THE FIRST TIME

The first time you run JetFighter III, you will be asked to create a new pilot for your career aboard the U.N.S. Peacekeeper.

CREATE A NEW PILOT

In JetFighter III, you play the game as a pilot aboard the U.N.S. Peacekeeper. The first time you run JetFighter III, you will be asked to create a new pilot. You can always create more pilot "alter-egos" later. For example, other family members will probably want to have their own pilot character.

You should see the Roster menu on the screen. The central window lists the instructions for creating a new pilot:

- ▾ Type in your pilot's first name. Press **[Enter]** when you are done.
- ▾ Enter the pilot's last name. Press **[Enter]** when you are done.
- ▾ Enter the callsign for your pilot. Press **[Enter]** when you are done. Notice that pilot information screen is filling in as you enter your name.
- ▾ Now, click in the photo window to choose a portrait for your character. You can keep clicking in the window to cycle through the available portraits.
- ▾ If you want to change your name or portrait, just click on the appropriate button.
- ▾ When you are all done, press the "ACCEPT" button on the top left.

INTRODUCTION ANIMATION

After configuring your hardware and creating a new pilot, you will see the JetFighter III introduction animation. To skip this animation, press any key or mouse button.

QUICK START

This section shows you how to start playing JetFighter III quickly. It is intended as a general overview as it does not cover many of the specific features of the program.

ABOARD THE U.N.S. PEACEKEEPER

Each time you run JetFighter III, you will find yourself aboard the nuclear aircraft carrier U.N.S. Peacekeeper. While aboard the Peacekeeper you can fly the next mission in the campaign or use the Free Flight menu to take your aircraft out for a spin. You can also use the Instant Mission menu to try any of the missions in JetFighter III without having them count towards your campaign score.

THE GAME ENVIRONMENT

Instead of menus and dialog boxes, JetFighter III uses a "first person" interface. This means that you are always "playing the game". You don't have to select "Campaign Mode" from any menu, simply follow the directions at the bottom of the carrier interface screen. You will go to the corresponding rooms on the aircraft carrier to perform different tasks. For example, to get your mission briefing, you walk into the Briefing Room and click on the appropriate area of the screen. To fly your next mission, you go to the Hangar Deck and click on your aircraft.

You will notice a summary of your current situation on the bottom of the screen. This summary lists:

Where you are on the aircraft carrier.

Your name, rank and callsign.

The campaign or "story" you are currently in.

Your current orders (or what you should do next).

GETTING AROUND

To walk around the aircraft carrier, simply use the mouse to click on where you would like to go. The first line of text below the main window will let you know if you can go into a room or manipulate an object. Moving the mouse to the bottom of the main window and left-clicking when the icon has changed will allow you to exit most areas.

You can also use the Jump Menu to get around the carrier. The Jump Menu is located in the blackened top third of the letterboxed screen. It is activated by moving your mouse cursor to the top of the screen.

YOUR FIRST MISSION

Each time you create a new pilot, you start out in the "Flight Training" campaign by default. Since you are running JF3 for the first time, you should be ready to fly your first training mission.

For each mission that you fly, there are certain locations aboard the carrier that you should visit. These places will give you valuable information about your missions, campaigns, and pilot status. Remember, you can always check your current on-board orders by the summary at the bottom of the screen. We will walk you through the entire process of flying a campaign mission.

HALLWAY - DECK 2

The Deck 2 hallway is the first place you arrive when taken aboard the aircraft carrier. Your orders at the bottom of the screen tell you to report to the Briefing room, but there are two other interesting areas you may want to visit first.

To exit, access the Jump Menu and select Library or move the mouse to the bottom of the main window and click. Move the mouse over the stairs up and click. Then move the mouse over the door to your right and click.

LIBRARY

There are two valuable sources of information here in the Library. On the left table is the Daily Newspaper. Stop in each day to keep updated on world events that affect your campaigns and missions. On the right table is the On-line Multimedia Encyclopedia featuring over 500 pages of photographs, drawings, and commentary. It also includes detailed descriptions of the medals you may receive during your career.

To exit, access the Jump Menu and select Cabin or move the mouse to the bottom of the main window and click. Again move the mouse to the bottom of the main window and click to turn around. Move the mouse over the door to your left and click.

CABIN

Here in your Cabin you will find your Terminal and Medals Case. On your desk in front of you is the Terminal where you will find campaign data, updated pilot statistics, and your daily email. Above your bunk is the Medals Case where you will find all of your medals and awards you receive during your tour of duty. Now simply follow the orders at the bottom of the screen and proceed to the Briefing Room.

To exit, access the Jump Menu and select Brief or move the mouse to the bottom of the main window and click. Move the mouse to the down staircase and click. Move the mouse over the door to your right and click.

BRIEFING ROOM

This is where mission briefings are given. In the middle of the room you will see the main mission display screen. This briefing will give you detailed instructions including your mission summary, target info, threat environment, and friendly forces in the mission area. You can also read over your orders by clicking on the blue booklets located on the table in the left hand corner. When you are finished, you will be instructed to go to the Hangar Deck, below Deck 2, to check your Weapons Loadout.

Access the Jump Menu and select Hangar or move the mouse to the bottom of the main window and click to exit. Move the mouse to the down staircase and click to enter the Hangar.

HANGAR DECK

After arriving in the Hangar click on the diagnostic station to the right. This will take you to the Weapons Loadout area. The default loadout is the recommended ordnance for the mission but you can still change this. Click on "Accept" to select your weapons and exit back to the Hangar Deck.

You're now ready for your first training mission. For the complete lesson instructions that complement the Training Missions, please consult the chapter **Flight Training**. When you are ready to report to your aircraft, click on the open bay door to "Fly Mission."

After you have returned from your flight, return and get your Debriefing. The Debriefing Room can be found just opposite of the Briefing Room on Deck 2.

FREE FLIGHT

Many players spend most of their time in Free-Flight. JetFighter III includes over 3.5 million square miles to explore!

Located in Ops, Free Flight allows you to pick any location in the world and explore the area in your F-22N or F/A-18. The red squares in the Free Flight control panel will indicate those scenery areas that are currently available. Sightseeing gives you a great opportunity to try out the virtual cockpit and external views available in JF3.

OPERATIONS

This is the center of activity aboard the UNS Peacekeeper and serves as the main menu for the JetFighter III pilot. You can access several other menus here including Free Flight, Instant Mission, Campaign Status, Configuration, and the Pilot Roster.

- Select Free Flight in Ops to take you to the Free Flight control panel.
- Click in a red square to zoom in to an area.

  If you are over water, click in the map window to move, or zoom out to select a new area.

  Play with the environment controls if you want.
- Select "ACCEPT" to fly

After several moments, you will be flying in the area of the world where you selected.

BASIC COCKPIT DISPLAYS

There are three important cockpit displays you should be aware of during your flight: Heading, Speed, and Altitude. These are located on the Heads Up Display. The HUD can be adjusted through 5 levels of brightness by pressing the **[H]** key.

Along the top of the HUD is the Heading indicator. This number reflects in tens of degrees the direction you are traveling in. Remember, 00 = North, 90 = East, 180 = South, 270 = West.

The Speed is indicated by the tape on the left side of the HUD. This is displayed in knots as a factor of 10. For example, a reading of "35" indicates a speed of 350 knots.

The current Altitude is displayed on the right side of the HUD. This figure is displayed in feet as a factor of 1000. For example, a reading of 4.7 indicates an altitude of 4700 feet. The 'S' indicates that this figure is the feet Above Mean Sea Level.
A 'G' indicates that this figure is the feet Above Ground Level. **[ALT]-[A]** will switch between these two different measurements.

BASIC FLIGHT CONTROLS

Basic flight controls include the throttle and directional control of the aircraft.

The throttle control is indicated by the percentage figure in the top left corner of the HUD. This is the percent of full military thrust that the engine is producing. Adjust the throttle by pressing the corresponding number key that runs along the top of the keyboard. For example, press [8] to set the throttle at 80%. If the engine is at 100% thrust, use the [+] key to move up to AfterBurner level 1, all the way to AfterBurner level 5.

JF3 can be flown with either the joystick or keyboard.
Your joystick will operate like they do in an actual fighter.
For example, if you pull back on the stick, the plane will go up.

The keyboard uses these instructions:

KEY	FUNCTION
[Esc]	Opens/Closes the In-Flight menu
[→], [←], [↑], & [↓]	Move within the In-Flight menu
[Alt-A]	Toggle altimeter between MSL & AGL modes

Keyboard number keys adjusts power

[L]	Toggles Pitch Ladder on/off
[Numpad 4]	Roll left
[Numpad 6]	Roll right
[Numpad 8]	Pitch up
[Numpad 2]	Pitch down
[Z]	Left Rudder
[X]	Right Rudder

For complete listing, consult the JF3 Keyboard Assignment in the Appendix.

THE VIRTUAL COCKPIT

When you find yourself flying over particularly interesting scenery, use the virtual cockpit to pan your view around. You can use either the joystick or keyboard to do this. First, level off your plane at a respectable altitude.

Joystick: While holding down the button #2 (usually top hat), move the joystick around. You now have control over the view. Release the button to lock your view, and click once to revert back to the default view.

Keyboard:

PAN LEFT	**[Numpad 7]**
PAN RIGHT	**[Numpad 9]**
PAN UP	**[Numpad 3]**
PAN DOWN	**[Numpad Del]**
ZOOM IN	**[<]**
ZOOM OUT	**[>]**
REVERT TO DEFAULT VIEW	**[Numpad 5], [F1]**
INSTRUMENT PANEL (ON/OFF)	**[P]**

These keys can also be used to look at the plane from an external view. To activate this external view, press the **[Numpad -]**. Press it again to revert to the default internal view.

To exit Free Flight, press **[Esc]** to bring up the Inflight Menu, use the arrow keys to move down from GAME and select RETURN TO CARRIER.

COMMON PROCEDURES

One of the best ways to learn to fly JetFighter III is to jump right in and give it a try. After all, it's a simulator, and there is fairly little chance of you getting hurt. This section of the manual lists some of the most common procedures that a JetFighter pilot must know in order to takeoff, fly, fight and land. They include:

- **Playing a Campaign**
- **Air-To-Air Combat**
- **Ground Takeoff**
- **Air-To-Ground Combat**
- **Carrier Takeoff**
- **Ground Landings**
- **Following Waypoints**
- **Carrier Landings**

If you are already familiar with other flight simulators, this section will get you up and running in JetFighter III very quickly.

If you are new to flight simulators, you can still use this section to experiment, but you may want to read more to understand some of the aviation concepts that are used here. Additionally, there are many more controls and options than you see listed in this section. Please refer to the Reference chapter of the manual for additional information.

PLAYING A CAMPAIGN

In JetFighter III, you are always in "campaign mode". You don't have to use a special "campaign" menu, all you have to do is walk to the appropriate room on the carrier and click on the correct object.

If you want to try a mission but don't want it to count toward your score, you can use the Instant Mission menu in Operations. Likewise, if you want to explore an area of the world, you can use the Free Flight control panel. Again, neither of these will count toward your campaign.

When you want to fly missions in your current campaign, you can use the following basic procedure:

GET YOUR DEBRIEFING

If you just returned from flying a mission, you will automatically be taken to the Debriefing Room. Here you will see how successful your actions in the previous mission were.

VISIT YOUR CABIN

After being debriefed, you may want to take some time off and go to your Cabin. Here you can check your personal statistics and use your Terminal to see if you've received any e-mail. You should also check the Medals Cabinet to see if you have been awarded any new commendations.

VISIT THE LIBRARY

It's always a good idea to read the Newspaper in the Library. It helps fill in the story during the current campaign. You may see the political ramifications of your previous missions, or get some forewarning of what U.N. Operations are likely to come. The Military Encyclopedia is also available in the library if you need more information on aircraft or weapons you encounter in the game.

PRACTICE FLYING IN FREE FLIGHT OR TRY A MISSION

Between combat missions you can always visit the Operations Room (OPS) and use the Instant Mission or Free Flight control panels. Remember, these let you fly without affecting your campaign score!

GET YOUR ORDERS

When you're ready for the next campaign mission, you should go to the Briefing Room to receive your mission orders. The orders will outline the mission objectives, and inform you of known enemy and friendly positions.

ARM YOUR AIRCRAFT

Once you have received your orders, you may want to customize your weapons load to suit the mission. Walk down to the Hangar Deck and select the Weapons Loading control panel. This panel allows you to arm your aircraft with a variety of different weapons configurations.

FLY YOUR NEXT MISSION

Now you should be ready to fly the next mission in the campaign. From the Hangar Deck, click on your aircraft which is sitting on the elevator ready to be taken on deck. You will soon find yourself in the cockpit, ready to fly.

ENDING A MISSION

A mission can end several ways.

- You can successfully complete the goal, and return for a landing. Your campaign statistics will be updated with your performance on this mission.
- You can complete the goal, but skip the landing by using the "Auto Land" menu option from the in-flight menu. We added this feature because many people don't want to have to fly all the way back to base after completing the mission. Your campaign statistics will be updated just as if you had landed yourself. Note that you may miss some action by skipping your flight home!
- You can abort the mission without finishing it by selecting "Abort Mission" or "Exit Program". The mission will NOT be counted toward your campaign score.
- You may also crash, blow up, get shot down or otherwise come to an early demise! You will be given the option of resurrecting your character, but the mission may not look so good on your record!

TAKEOFFS

GROUND TAKEOFF

Taking off from the ground is quite easy. This short procedure will help get you up in the air quickly.

WEAPONS TO SAFE

Be sure that no weapon is selected. This will prevent misfires and the accidental injuring of personnel on the ground. If necessary press **[N]** to disarm your weapons and enter NAV mode.

TAXIING

If you need to drive to the end of the runway, press to bring your engines to 10% military thrust. Use the rudder keys **[Z]** and **[X]**, to steer your aircraft. You can press **[B]** to engage the wheel brakes if you need to slow down. Pressing **[B]** again will release the wheel brakes. Drive to the end of the runway and align the aircraft pointing down the airstrip. If you need to turn around sharply, use the **[-]** key to slow to 3% military thrust and you will be able to turn in a tight circle.

POWER TO 90%

Bring the engines up to 90% thrust by pressing **[9]**. The aircraft will begin to roll down the runway. If you're not moving, you may have the wheel brakes engaged. Press **[B]** to release them. Use the rudder (**[Z]** and **[X]**) to stay in the middle of the runway.

TAKEOFF!

Watch the airspeed display on the left of the HUD. When it approaches 18 (180 knots) begin your takeoff "rotation". Gently pull back on the joystick or hold down the **[Numpad 2]** key. In just a moment you should be airborne! After you are a couple hundred feet in the air press **[G]** to raise your landing gear.

CARRIER TAKEOFF

Aircraft carrier takeoffs are just as easy as ground takeoffs, although they are considerably more exciting. The following steps will lead you through a catapult assisted carrier launch.

WEAPONS TO SAFE

If necessary, press **[N]** to disarm weapons and enter NAV mode. Note that "NAV" appears in the lower left of the HUD.

FULL POWER!

After you receive the "ready for takeoff" message, press **[0]** to spool your engines up to 100% military thrust. Because new jet engines are so powerful, afterburners are no longer required for carrier launches.

HOLD ON!

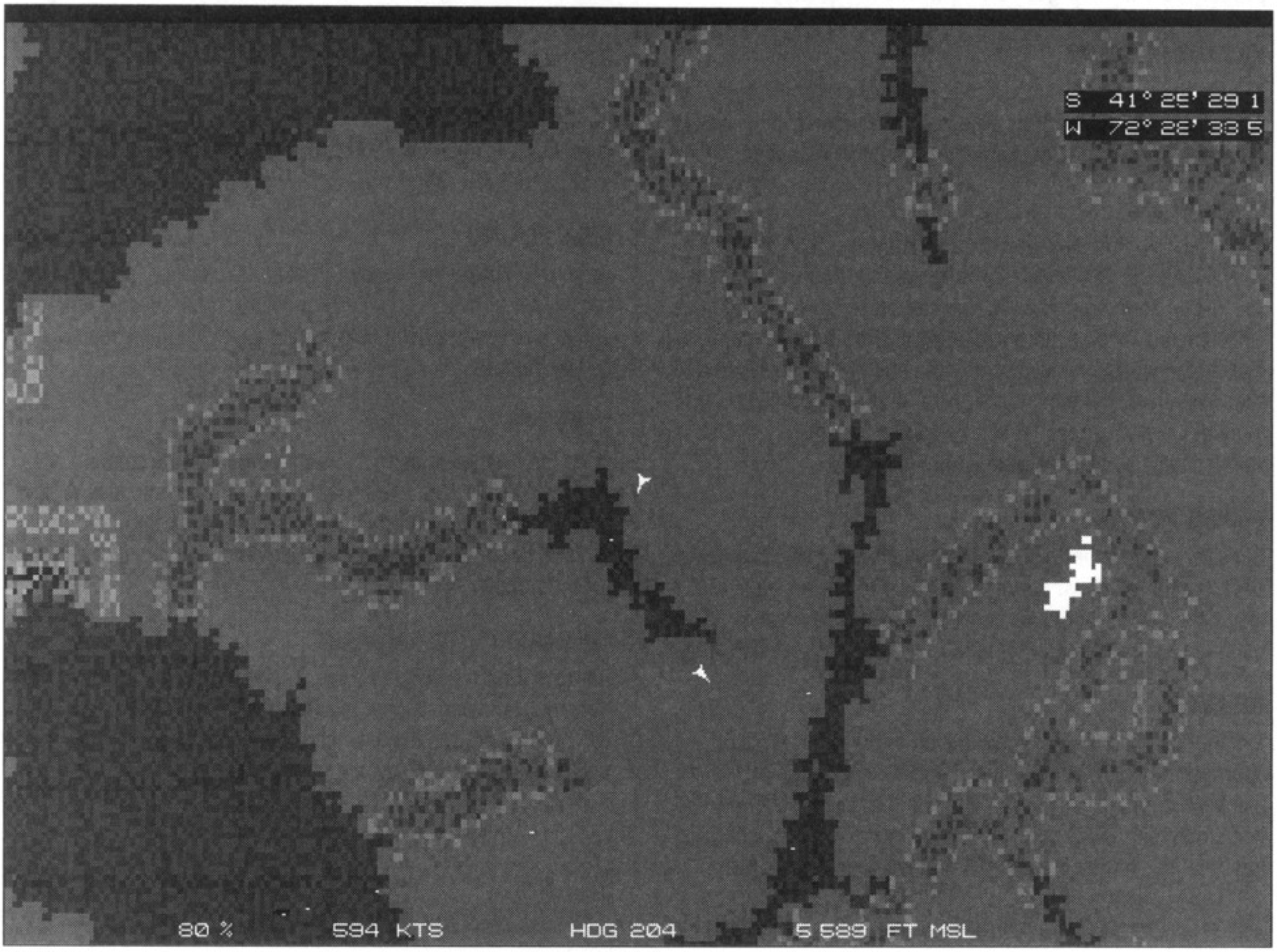
Once your engines reach the required power, the catapult will automatically launch you forward. You should pull back on the stick (or press **[Numpad 2]**) to be sure to clear the deck once you are free of the catapult. The ride down the catapult may be a little bumpy!

"CLEAN UP" THE AIRCRAFT

After clearing the deck, quickly raise your gear by pressing **[G]**. You can also decrease the throttle after gaining a little altitude. Of course, that was the easy part. Eventually, you will have to go back and land on the carrier!

FOLLOWING WAYPOINTS

A waypoint is simply a position is space that a pilot may want to fly to. A waypoint could be a target, or it may represent a point at which you are supposed to rendezvous with another aircraft. Usually, however, a waypoint is a location at which you are supposed to turn to the next waypoint. These types of waypoints are called Navigation Turn Points or NTPs.

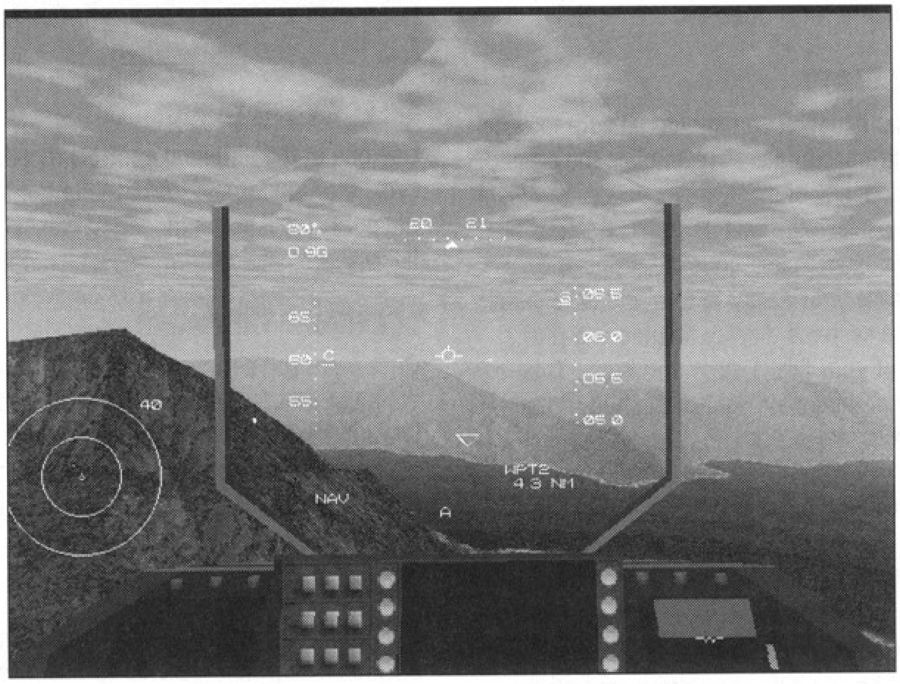


Waypoints are grouped together to create a flight-plan or course for your mission. They are usually designed to keep you out of danger until you reach the target area. By flying from one waypoint to the next, you can easily navigate your way through a mission.

Learning to follow waypoints is very important to flying missions in JetFighter III. Luckily, it is also VERY easy to do. This short procedure will walk you through flying from waypoint to waypoint. If you need a mission to experiment with, use the Instant Mission control panel in the Operations room and select Training Mission #3: Waypoint Navigation.

SET UP NAVIGATION MODE

Before using waypoints, you need to put the HUD into Navigation mode so you can read the waypoint displays. Press **[N]** to disarm your weapons and enter NAV mode. You should see the letters NAV appear in the lower left of the HUD. In the lower right of the HUD you will see information about the current waypoint. Once in NAV mode, the **[N]** key is used to cycle through waypoints.



EXAMINE YOUR WAYPOINT LIST

Press **[F7]** to look at the right MFD. If necessary, press **[F7]** again until the waypoint list screen appears. This screen lists all the waypoints programmed into your aircraft for this mission. You can press **[N]** for the next and **[Shift][N]** for the previous waypoints. Each waypoint has a name, relative heading, and distance. After looking at the waypoints, press **[Shift][N]** until you are back at the first waypoint in the list.

DETERMINE THE DIRECTION TO THE WAYPOINT

Press **[F1]** to return to the normal forward view. At the top of the HUD is the heading display or "tape". Above the heading tape is a solid green triangle. This is the Navigation Director. It always indicates the direction to the currently selected waypoint. If the Navigation Director is left of center, you need to turn left. If it is right of center, you need to turn right.

TURN TO THE CORRECT HEADING

Bank your aircraft left or right and continue to turn until the Navigation Director is centered in the top of the HUD. Level your wings. If the pointer drifts off center, you can use the rudder (**[X]** and **[Z]**) to yaw your aircraft and re-center it. You are now flying toward the waypoint.

FLY TO THE WAYPOINT DESIGNATOR

After you successfully turn towards the waypoint, you will see a green outlined triangle in the HUD. This is the Waypoint Designator; it shows you where the waypoint actually is. You can now fly up or down to the correct altitude for the waypoint. Check the lower right area of the HUD to see your distance to the waypoint. This information is also in the navigation MFD accessed by pressing **[F7]**.

INDEX TO THE NEXT WAYPOINT

When you get within 1 mile of the current waypoint, press **[N]** to choose the next waypoint in the list. As before, turn your aircraft to center the Navigation Director and fly to the next waypoint. That's all there is to it!

AIR-TO-AIR COMBAT

When entering an air combat environment, there are several helpful procedures you can follow to configure your aircraft properly and give you a better chance of surviving a dogfight. This list is a good quick reference to the functions you would normally perform to prepare for a dogfight.

"CLEAN-UP" YOUR AIRCRAFT

Before you enter a combat situation you should be sure to raise your gear **[G]**, retract your speedbrake **[B]** and raise the arrestor hook **[A]** if, for some reason, any of these are extended. You want your aircraft to be able to achieve the best performance possible. You may even consider jettisoning any unused bombs and Mavericks. This will increase your ability to turn and accelerate rapidly. You can check the systems display by pressing **[F8]**. It details the conditions of your brake, gear and hook. This information also appears in the upper right of the hud. If that area is clear, your aircraft is "clean".

EXAMINE THE SITUATION

There are three ways to check the current "combat environment": The Radar **[F6]**, the Map **[M]**, and the On-Screen Radar **[Alt][R]**. Determine which targets are most threatening and which you can deal with later. The On-Screen Radar **[Alt][R]** is particularly convenient because it is superimposed on the screen and you don't have to change 'views'. Symbols on the radar are color coded:

GREEN–friendly **RED**–hostile **WHITE**–missile
BOLD–above your altitude

SET IFF DISCRIMINATOR

Press **[;]** to cycle your IFF DISCRIMINATOR between All, Non-Hostile (Friendly) and Hostile. This setting determines what types of objects are allowed to be targeted. Note the letter in the bottom center of the HUD. It will cycle between A, NH and H. You will probably want to set this to Hostile for most missions.

SELECT A WEAPON

Select an Air-to-Air weapon by pressing **[Enter]** to cycle forward and **[Shift][Enter]** to cycle backward through your weapons. Here is a simplified list of which weapon to use:

WEAPON NAME	HUD ID	WHEN TO USE
M61A1 Cannon	M61	target is 1 mile or closer
Aim-9 Sidewinder	SW	target is 1-5 miles away
Aim-120 AMRAAM	AM	target is 5-12 miles away

SELECT YOUR TARGET

Use one of the targeting controls to select a target. Press **[T]** to cycle through targets, or **[U]** to target the object directly ahead of you. **[Y]** will select the target closest to you. Remember, the IFF Discriminator determines which objects can be targeted.

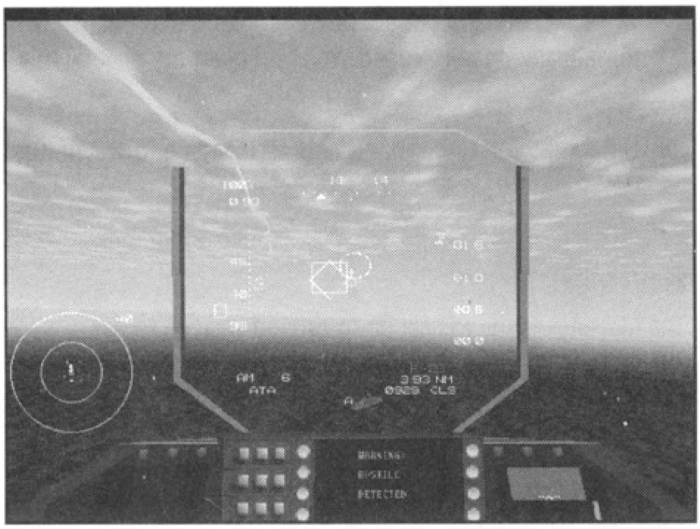
CONFIGURE THE RADAR

Once you have selected a target, you can press **[Ctrl][R]** to put the radar into "autorange" mode. In "autorange" mode, the radar will automatically change range to keep your current target visible on the radar display. If you want to manually change range, press **[R]** and **[Shift][R]** to cycle through different ranges. This will automatically disable autoranging.

UNDERSTAND THE HUD

Once the HUD is in air-to-air mode, there are many symbols on the HUD which are vital to successful air combat.
Here is a summary:

- The Target Designator box surrounds your target. If there is an X through it your target is a friendly! Don't Shoot!
- The Range Circle "fills up" clockwise as your target gets closer!
- The Target Information area in the lower right of the HUD lists the target type, distance and closure rate.
- The Weapon Information area in the lower left of the HUD lists the currently selected weapon type, the number remaining and the HUD mode.
- The target Aspect Angle indicator lets you know what direction the enemy is headed. If the dot is on the bottom of circle, he is heading away from you—a great opportunity to fire a missile at him! See the Reference Chapter for more information on the Aspect Angle indicator.



AIR COMBAT MANEUVERING

This is the tricky part! Use the joystick, rudder and throttle to maneuver to get the best shot at your target. This is what it is ALL about! Here are some simple tips on a subject that really deserves volumes:

- In general, get BEHIND your target for the best shot. Use the Aspect Angle indicator to judge this.
- If you're flying too fast, you won't be able to turn rapidly enough. Try 90% military power **[9]**.
- If you're flying too slow, you will loose your target. Worse yet, he may get behind you!
- Loose the sight—loose the fight. Keep your eye on the target!
- Watch for other Bandits behind you that you may have missed. Look at your radar often. Again, we recommend the On-Screen Radar **[Alt][R]**.
- Watch for SAMs and other ground defenses when over enemy territory!

TACTICAL VIEW

Pressing **[F9]** will initiate Tactical View. In this mode, the computer will automatically "turn your head" to keep the currently selected target in view. You may find it helpful to keep the instrument panel visible (**[P]**) while in tactical view to help keep your orientation. Press **[F9]** again to turn tactical view off.

LAUNCH WEAPONS!

Press the **[Spacebar]** to launch the currently selected weapon. You can press **["]** to fire the cannon no matter what weapon is armed. You can press **[F10]** to get a "weapon's eye view" of the missile trying to seek the target. Press **[F1]** to return to the cockpit.

AIR-TO-GROUND: MAVERICKS

In many missions you will be asked to strike targets on the ground or at sea. There is a variety of weapons that can be used, including guided Maverick missiles. Mavericks will seek their targets automatically once released. You can even fire several missiles at several different targets, one after the other.

This procedure will get you to the target and show you how to attack it. Be sure you understand how to navigate to waypoints before attempting a ground strike.

GET TO THE TARGET

Follow your waypoints up to the target. Usually, your target will actually be listed as a waypoint. Sometimes, you may be attacking an "area", in which case you will need to press **[T]** to find your target.

SELECT MAVERICK MISSILES

Select an AGM-65 Maverick by pressing **[Backspace]** until "MAV" appears in the lower left of the HUD.

SELECT THE TARGET

You should already have the target waypoint selected. If there are other pre-designated targets in the area, you may need to press **[T]** or **[Shift][T]** to select other targets. Notice the name and distance to target in the lower right of the HUD.

MAVERICKS AWAY!

The Maverick is the easiest air-to-ground weapon to use. This missile will seek the currently selected target. Just press **[Spacebar]** and the missile will be launched. Use **[F10]** for a spectacular missile view.

SPECIAL NOTE

Mavericks are "smart" weapons. They seek out the selected target under their own control. However they do not know about the contour of the terrain below them. A Maverick will NOT know to avoid a hill between you and the target. Be sure you have a clear "line of sight" before firing a Maverick.

AIR-TO-GROUND: CCIP/BOMBS

The Mk82 and Mk84 bombs require more skill than the Maverick missile because they are totally unguided. They simply fall to the ground. The CCIP system is designed to help you lay the bombs right on the target.

CCIP stands for Continuously Computed Impact Point and, just like it sounds, the system constantly calculates where your bomb will hit if you release it at any given moment. The CCIP takes into account your speed and orientation, as well as the contour of the terrain out in front of your aircraft.

The following procedure outlines arming a bomb, activating the CCIP system, and releasing your ordnance.

GET TO THE TARGET

Follow your waypoints up to the target. Once you are there, press **[T]** to select the desired target.

CHOOSE YOUR WEAPON

Press **[Backspace]** until Mk82 or Mk84 appears in the lower left of the HUD. You will also see CCIP indicating that the CCIP targeting system is activated.

CHOOSE THE TARGET

If your target is pre-designated, you will see the target designator box appear around the target. Check your range to target in the lower right of the HUD. You may need to press **[T]** or **[Shift][T]** to select nearby targets.

UNDERSTAND THE CCIP DISPLAY

After selecting the Mk82, the CCIP targeting system will activate. A line will be drawn from the center of the HUD down toward a circle. The point in the center of this circle is where your bombs will impact the ground. This is the "impact point". If the circle is below the HUD, this means the bomb will impact at a point you can't currently see.

MANEUVER FOR RELEASE

To use the CCIP system, you need to maneuver your aircraft until the "impact point" circle is over the target. This can be difficult at first. It is important to remember that when you release a bomb, air friction begins to slow the bomb's forward movement, so the impact point may be below and behind your aircraft. Nose down until the impact point appears in the hud.

BOMBS AWAY!

When the impact point is over your target, press **[Spacebar]** to release a bomb. CCIP aiming is quite challenging, so please consult the Reference Chapter if you are having trouble. There is also a training mission devoted to CCIP bombing.

WATCH FOR DEBRIS

If you were bombing from a very low altitude, you should accelerate and pull-up to avoid debris from the explosion. Also, you can be sure that the enemy will now have even more incentive to shoot you down, so watch your six!

MANUAL TARGET DESIGNATION

Many of your ground targets will be pre-programmed into your navigation system. They can be engaged as described above. Other targets may be mobile, or may be difficult for intelligence squads to pinpoint. These targets must be "manually designated" for smart weapon attacks. Put simply, this means that YOU must "tell" your Maverick missile where you want it to seek.

This is done by "looking at" a point on the ground and telling your Maverick to fly to that point. A combination of Inertial Navigation and Global Positioning will assure that your Maverick reaches its target.

This procedure will describe how to designate and strike a "target of opportunity" that is not programmed into your waypoint list.

GET TO THE TARGET AREA

Usually you will know the general location of the target(s). Follow your waypoints to the target area.

SELECT MAVERICK MISSILES

Select an AGM-65 Maverick by pressing **[Backspace]** until "MAV" appears in the lower left of the HUD.

ACTIVATE THE MANUAL DESIGNATOR

Press **[Shift][D]** to turn on the Manual Designator. It appears as green crosshairs (+) in the center of the screen.

DESIGNATE A TARGET

Once the Manual Designator is activated, pressing **[D]** will cause the Missile to lock on to the position on the terrain under the crosshairs. Press **[D]** as many times as you want to designate a new location. You can maneuver the aircraft to point at the desired target, or you can use the virtual cockpit to "look" at the desired target. You can even zoom in **[>]** and out **[<]**. For convenience, the Manual Designator always points where you are "looking", not necessarily where you are flying.

MULTIPLE PASSES

Although it is dangerous, you may want to make one pass over the target area to designate the target, and a second pass to actually attack it. Watch for SAMs and AAA fire.

HUD SYMBOLOGY

Manually designated targets appear as a diamond shape on the terrain. This is to remind you that you manually selected that target area instead of choosing it from your waypoint list. Be careful what you shoot at!

MAVERICKS AWAY!

Press **[Spacebar]** to fire the Maverick. It will seek the location you designated. After the Maverick is away you can immediately designate a new location with **[D]**. The Maverick you fired will remember its target. When you're finished, press **[Shift][D]** to turn off the designation system.

GROUND LANDINGS

This procedure outlines the basics of landing at an airfield. There are several instruments and devices that can help you, including Waypoints, the Instrument Landing System and VASI lights.

Waypoints will lead you toward the runway and get you "lined up" for an approach. The Initial Approach Fix is a point about 10 miles away from the runway that is used to align your aircraft with the approach pattern.

FOLLOW YOUR WAYPOINTS

If you have waypoints programmed to take you back to a land base, follow them to the Initial Approach Fix (IAF) point. You should be at 6,000 feet when you reach the IAF. Proceed to the Final Approach Fix (FAF). See the procedure on Following Waypoints if you need more help.

FIND THE RUNWAY

If you don't have waypoints programmed for the airport, you will need to make an initial pass to determine which runway you want and to verify there is no air traffic in the way.

FINAL DESCENT

At the FAF, or 3 miles from the runway, press **[5]** to slow to 50% military thrust. Lower your gear by pressing **[G]**.

By watching the Velocity Vector symbol on the HUD, you can determine where your aircraft is headed. Gently pitch the aircraft up or down until the velocity vector symbol is on the near end of the runway.

ADJUST YOUR DESCENT RATE

On the left edge of most runways are VASI lights. These Visual Approach Slope Indicator lights provide a visual representation of your approach angle. One set of lights is on the near end of the runway, and the other is on the far end. Use these lights to adjust your altitude if necessary.

APPROACH	FAR	NEAR
Correct	red	white
To High	white	white
Too Low	red	red

Fly down toward the runway keeping the correct approach angle.

TOUCHDOWN FLARE

As you pass over the runway, gently raise the nose of the aircraft by pulling back on the stick or pressing **[Numpad 2]**. Reduce power to 20% by pressing **[2]**. Let your aircraft "bleed off" airspeed. As you slow down, your aircraft will touch down on the runway.

COME TO A STOP

Press **[1]** to slow your engines to 10% thrust. Use the wheel brake **[B]** to stop your aircraft. You can shut off the engine by pressing **[~]**.

CARRIER LANDINGS

Carrier landings are one of the most difficult tasks any pilot can face. JetFighter III has the most realistic and exciting carrier landings available for your computer. You will need to place your aircraft on a 400 foot landing strip that is moving, pitching and rolling out in the middle of the ocean.

If that sounds like a bit much, use the Cheat menu in the simulator and set Landings to EASY. We strongly recommend this for beginners.

FOLLOW WAYPOINTS TO INITIAL APPROACH FIX

Use the waypoint system (**[N]** and **[Shift][N]**) to fly to the Initial Approach Fix (IAF). This is a point about 11.5 miles behind the carrier. It will appear as "IAF" in the lower right of the HUD. Be sure you are at the correct altitude, and keep your power below 90%.

CONFIGURE FOR LANDING

At the Initial Approach Fix, lower your landing gear by pressing **[G]**. Lower the arrestor hook by pressing **[A]**. Press **[N]** to select the next waypoint, FAF or Final Approach Fix.

FLY TO FINAL APPROACH

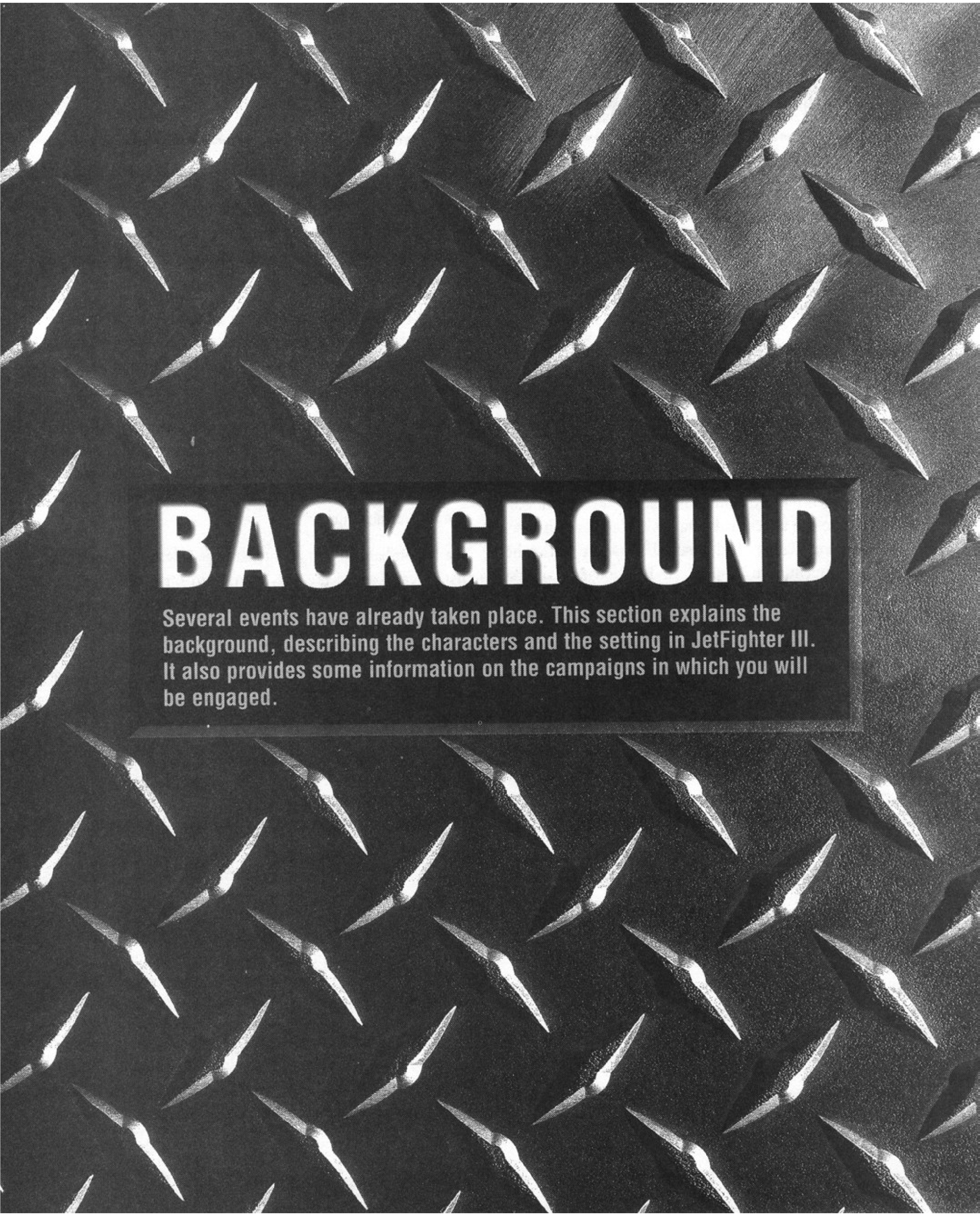
Press **[5]** to slow to 50% military power. As you fly to the Final Approach Fix, notice the dotted bars that have appeared in the HUD. This is the ILS system and it will help guide you to a successful landing. Once you reach the Final Approach Fix, you should press **[N]** to select the final waypoint, CVN.

IN THE GROOVE

Slow to 40% power by pressing **[4]**. During final approach, you should pay attention to the ILS bars and the velocity vector. Keep the velocity vector on the stern of the carrier. Keep the ILS bars centered in the HUD. At 100 yards from the carrier, the ILS display will disappear to give you a clear view of the deck.

POWER UP!

Just as you pass the stern of the carrier, press **[0]** to bring your engines up to 100% thrust. Carrier pilots do this as a life saving precaution. If the arrestor hook misses the 4 cables, you will need enough thrust to "bolter", or take off again, in order to come around for another pass.



BACKGROUND

Several events have already taken place. This section explains the background, describing the characters and the setting in JetFighter III. It also provides some information on the campaigns in which you will be engaged.

THE STORY SO FAR

Under the cover of night the F-15 Eagle screamed into a 7-G turn. Major Mario Salvadore held the stick tight as he drove the plane parallel to the Andean plateau below. He whipped the plane down 90 degrees and pointed the nose toward the ground. Salvadore checked his Heads Up Display. *Damn, haven't shaken him yet.*

The Chilean major pulled the plane up and pointed the Eagle toward the clouds. At the same time he tripped the brakes and cut the throttle back to 50%. His pursuer, flying a MiG-29 Fulcrum, did just as Salvadore planned and shot right under and past the F-15. Salvadore banked again to the left and brought the plane back up to military thrust.

Chilean intelligence hadn't warned him about any Argentinean air presence so the attack had come as a complete surprise. The three enemy fighters had attacked Salvadore just as he crossed into Argentinean airspace. He had downed the first two MiGs with his only two AMRAAMs. There was no reason for an Argentinean patrol to be out over this uninhabited region, especially flying state-of-the-art Soviet fighters, which were rare in this part of the world. Salvadore knew he was on the right trail.

Off in the distance the MiG pulled a tight elliptical turn right into the glare of the full moon. As the planes closed in a deadly game of airborne chicken, neither dared to turn away first lest they expose their vulnerable tail to the enemy. Considering his options, it was the most obvious of maneuvers that flashed through Salvadore's mind—*Immelmann.*

Salvadore pushed the speed up to 600 knots and leveled out his position, still raging straight into the oncoming MiG. This was the heart of the duel, where each combatant knew what was coming next and both prepared to be the quickest draw.

The proximity warning screamed into Salvadore's ear. He had to time his maneuver perfectly coming as close to the MiG as he dared, even allowing the Soviet-made fighter to make the first move so he could react. It always came down to timing.

The MiG seemed to leap out of the horizon as it screamed toward Salvadore. *He's punching it to blow past and pull a tight turn to get my six. Perfect.*

The range marker on the Heads Up Display slowly rotated around the edge of the Aiming Reticule. 6 o'clock, 6000 feet away. 5 o'clock, 5000 feet away. 4 o'clock, 4000 feet away. Salvadore expected that the MiG would open up with her guns before flying past.

The MiG hadn't blinked. It kept coming straight at him. The range marker continued to move counter-clockwise towards straight-up 12 o'clock. Salvadore felt his rising impatience seep away as raw instinct took over.

The two planes closed at blinding speed. Salvadore squeezed the trigger and fired the Eagle's cannon, trying to draw first blood. The MiG opened up her guns as the two planes drew together. Quick as lightning they passed by, neither plane scoring a critical hit.

The bandit banked left. As suddenly as Salvadore caught the first graceful arc of the MiG starting to turn, he pulled the stick all the way back. The F-15 soared straight up into the night sky. Reaching the vertical, he pushed the stick right, snapping off a 90 degree airelon roll. Salvadore then pulled back to fly inverted and righted himself with a slow 180 degree roll. Punching the afterburners, he guided his jetfighter after his target.

With the perfectly executed maneuver, the F-15 now had superior position. Salvadore quickly closed the distance on the MiG. The heads-up display showed the target was locked on by the Eagle's radar. The MiG tried to shake loose of the F-15 but to no avail. Salvadore hung on the MiG's tail for several more seconds before the lock-light told him he had closed to within the missile's firing radius.

Salvadore selected a Sidewinder and fired. In a glorious trail of screaming exhaust the missile leapt toward the enemy bogie. Two heartbeats, then an orange ball of flame consumed the MiG as it careened down toward the mountain tops.

Checking the radar and finding it clear of other aircraft, Salvadore angled the Eagle back down toward the ground. Flying the nape of the earth would keep him safe from enemy radar detection, and allow him to complete this covert operation.

Secret missions over Argentinean territory weren't usually flown by Chileans in F-15 Eagles, especially solo. However the current situation was grievous. Chile had known for some time that Argentina was deploying troops along the border, but now intelligence reported that they were attempting to buy a nuclear missile from China. According to sketchy intelligence reports, the transaction was to take place tonight.

Salvadore was brought out of his reverie by the flashing target icon on his Real Beam Map Display. He reached over and switched to the High Resolution Map. Still 20 nautical miles away, the targets were rendered in fine detail. Two BTR-60 armored personnel carriers encircled a green sports utility vehicle. A nondescript flat bed truck stood parallel to the carriers, a large tarp covering its deadly nuclear cargo.

Salvadore designated the truck as the primary target in the HRM. With a final check of displays, Salvadore toggled the pickle button and sent two GBU-15s flying toward the encampment.

Using infra-red, the heavyweight weapons locked onto their target. The glide bombs flew straight through the darkness, striking the ground with brute ferocity and turning the night into day. Great heaps of dirt and metal shrapnel exploded into a large, black cloud.

Salvadore pushed the stick to the right and swung the F-15 back around. Checking the display he confirmed that all targets had been destroyed. At that moment shrill warning sounds filled the cabin as flashing lights suddenly appeared on the TEWS display. Multiple SAMs had been launched and locked on to his plane.

Damn, that SAM battery must've been well-hidden in the forest. Salvadore checked his radar. Five bogies were hot on his tail. A quick feint towards the ground then a hard turn to the right on the stick lost two of the missiles. But the SAM launch had taken place just as he flew over the battery's position, and that was just too close. In desperation Salvadore pulled back on the stick and climbed for more altitude. Three missiles followed him up.

He snapped-rolled left, spiraled down and then right again. He flicked the countermeasure switch and a cloud of chaff was released behind the F-15. Two missiles exploded harmlessly in the scattered debris. One SA-6 flew straight and true and detonated just under the Eagle's right wing.

Heart pounding, Salvadore looked aside to see thick smoke billowing out of the right engine. A large portion of the wing had been shredded. The stick bit into his white-knuckle grip. *This show's almost over.*

Red warning lights cried out over the display screens. As the F-15 began to shake and shudder, Salvadore knew his time was short. He reached down with his left hand and felt the comforting handle of the ejection initiator. Giving a hard pull, Salvadore braced for ignition.

The dual initiators fired as the canopy was jettisoned from the plane. The inertia reel initiator retracted the restraint straps, fully immobilizing Salvadore. Rockets propelled the ejection seat out of the doomed craft. Salvadore felt the strain of over 13 Gs press down on his body. The ejection seat sailed clear of the plane as the gyro-controlled rockets kept the seat aligned in the pitch plane. Reaching free fall, the recovery parachute was deployed and the ejection seat spun away.

Salvadore was too much of a realist to dwell long on the loss of his plane, even an F-15. He knew that his superiors would trade the plane for the success of the mission. At least now Argentina would have to try a different method of acquiring nuclear weapons. Unfortunately Salvadore knew that he probably wouldn't see anymore air time.

The wide expanse of a hilly, Argentinean forest opened beneath him. Off in the distance Salvadore heard the thunderous clap of his F-15 exploding onto the ground. There would be no search party sent for him. He was now in hostile territory with a war about to start. *Hopefully I can make it back to Rancagua.*

* * *

THE STORY SO FAR (CONT.)

Captain Dwight D. Davenport kept the tour moving at a brisk pace. He'd given this ship tour dozens of times to various VIPs since taking over the helm of the Nimitz-class carrier three years ago. Davenport didn't mind giving the walk-through as much this time. Usually it just annoyed him, ferrying around a bunch of lazy, overweight Capitol Hill paper-pushers. But Roenick had been appointed the Squadron Commander of the new UN Rapid Deployment Force, and that in itself spoke volumes about the grizzled Canadian who walked beside him.

Today his aircraft carrier was almost empty, staffed by only a bare-bones crew. Officers and other essential personnel would begin arriving tomorrow. The pilots would be the last to arrive. Docked at New York, the newly christened UNS Peacekeeper sat stoically awaiting orders.

Captain Conrad Roenick tried to keep up with Davenport. As befitting the leader of the UN's Rapid Deployment Force, he was the first of the new recruits to board their new home. The Rapid Deployment Force was born into a world of raging international conflicts. When negotiations failed the United Nations needed the military might to enforce international law. It was up to the RDF to keep the world peace.

Roenick noticed he had started to fall behind the lumbering Davenport, who bore an uncanny resemblance to the White Sox first baseman Frank Thomas. Since he was the only member of the tour, Roenick assumed Davenport would show him around the ship at a leisurely gait. Roenick stepped through another bulkhead into a long hallway.

"Welcome to your new home Captain Roenick," Davenport announced. The carrier captain walked forward to one of the doors set into the wall.

"You don't have to call me Captain when the other pilots aren't around. Besides, it's your boat. Just call me Conrad," Roenick said as he walked into his cabin. Davenport nodded his approval and followed him through the door.

As expected, the cabin was small. Space aboard an aircraft carrier was limited, but the room allotted to Roenick was fit for a king. Looking around he noticed his duffel bag and shipping crates had arrived before him. There were spartan furnishings already in place. A terminal sat unblinking on a small desk, connected storage drawers above, a chair underneath. A small sink was attached to the wall. Hanging over the bed, Roenick saw an empty glass case, lined with green-velvet, used to display medals and awards. *It won't be empty for long.*

"Do you want some time to unpack now or would you like to finish the tour?" Davenport asked.

Roenick patted the green duffel bag lying on the bed. It always reminded him of a giant stuffed sausage. "It can wait. Let's see the rest of the Peacekeeper."

Davenport held the door open for the squadron commander and followed him out into the hallway. Roenick paused a moment outside the door. "I don't remember seeing computers in the officer's quarters before."

"Yeah, that's new," Davenport answered. "It's very convenient. The terminal allows you to download carrier information or mission operation updates. You can even keep a personal log. But the best part is the e-mail."

"You mean with other people on-board?" Roenick asked.

"Nope. With our satellite link we're connected through to the Globalnet. A lot of guys still get normal snail mail, mainly because their mom can't send them cookies through the modem. But I can keep in touch with my wife everyday. Helps make those six-month voyages just a little more bearable."

Roenick nodded in silent agreement. The Canadian officer had suffered through a bitter divorce as a young man and had stayed away from long-term commitment ever since. But if there was someone he cared about, daily contact would be nice.

Davenport stopped midway down the next hallway. Garishly out of place and decorated like a telethon board, a small scoreboard hung on the wall.

"This is the landing board," Davenport began. "As you know the Landing Signal Officer is responsible for monitoring and grading carrier landings. Each time one of your men does a trap, the LSO gives them a rating. They also post the current pilot rankings here," Davenport paused. "Let's just say this is also the place where your men will gather up their bets from one another."

"Is your LSO on the up and up?" Roenick asked with a smirk.

Davenport's mouth broke into a huge smile. "Unfortunately Lieutenant Sangria is beyond reproach. Pilots have lost many a paycheck over the high degree of Bull's honesty."

The landing board was mounted beside a door marked LIBRARY. Once inside Roenick saw shelves completely filled with books. On one desk sat a stand-alone computer. To the left a stack of newspapers covered the table.

Roenick walked over to the terminal. "Another computer? Is the UN going to make me learn how to type?"

Davenport took a seat at the desk. "This is our new CD-ROM multimedia machine. We've got a great on-line database of modern aircraft and armaments. Even a veteran like you could learn a few new things from this program."

Walking along the bookshelf, Roenick reached up and pulled down a hard cover book slightly covered in dust. The front cover read, "Catcher in the Rye by J.D. Salinger". Roenick held the book aloft. "I read this book. Once. Taught me about fear, which was good 'cause I never would've learned otherwise."

Davenport shook his head with a look of mock disgust on his face. "Just what this ship needs. Another overconfident pilot who thinks he's a poet." Davenport got up out of the chair and started to leave the room. "If you ever want to know what's being reported as news out in the real world, the ship also keeps the daily papers in here."

The two men continued down the hall. They hit the stairs at the end and climbed up to the next deck. Davenport then showed Roenick the Briefing and Debriefing rooms.

"You'll probably wear a hole in the floor shuffling between these two rooms," he said.

"You're probably right."

The kill board was located outside the Debriefing room. Although empty, it hung there without a word to what the numbers really meant. Human lives. Shooting down an enemy was a source of pride but not something that was joked about or wagered on. In a civilized world where war was the necessary price to pay, Davenport and Roenick walked by the kill board quietly, lest they take too heavy a step and shake the numbers awake.

The two captains returned to the stairs and headed all the way down to the hangar deck. Normally the busiest place on ship, today it was as quiet as a museum. This was the area where the planes received general maintenance and overhauls. Roenick couldn't hide his surprise at the number of planes and equipment filling the hangar.

"I can't believe this. I thought that we'd be flying beat-up A-6s and a stray Phantom or two," Roenick said with astonishment. The hangar was filled with the best America had to offer. F-14 Tomcats kept close company with F/A-18 Hornets.

Roenick walked over to a group of planes set apart from the others. Their regal lines drew and coalesced into a ominous silver form. Near one set of elevator doors these pristine new jets waited, untouched by the harsh hands of nature.

"Are those what I think they are?" Roenick asked, mouth agape.

"Didn't believe it myself until I saw them loaded aboard last week. The F-22N Lightning II. Also known as the Rapier. The most advanced tactical fighter on Earth." Davenport said.

"Tough."

"All the F-22N specs, including the special carrier modifications, are down in the library in the on-line military database."

"Very tough." Roenick continued to run his hands over the dense polymer-composite that coated the outside of the fighter plane.

"That's the way it is with you pilots. Lust at first sight."

Davenport continued his tour of the hangar area, showing the Squadron Commander where the armaments were kept. Stacks of AMRAAMs and other missiles were carefully stored and tagged so the ground crews could quickly locate and load the recommended mission ordnance.

Next to the weapons loading area, up against one wall of the hanger, was the paint shop. The planes would be painted with the United Nations flag and the new RDF symbol. Pilot names and call signs would also be stenciled on the jets.

"I was reading over the ship's crew list. Personnel from over thirty countries. How did you overcome the language barrier?" Roenick asked.

"Simple. Everyone had to pass an English language equivalency test. All documents and communications will be in English."

Roenick and Davenport headed for the elevator. "It's almost time for dinner and I'm buying. We're having sliders tonight," the Captain said.

"My first night here and we're staying in to eat?" Roenick asked.

"They're the best hamburgers I've ever had. I never miss them. C'mon, let me show you the flight deck before we head down to the mess hall," Captain Davenport continued as they entered the elevator. "Even New York looks beautiful from the deck of an aircraft carrier."

* * *

Senator Andrew J. Beauregard took a long pull at his cigar. Beauregard didn't drink and as such allowed tobacco to be his only vice. Long, wispy trails of smoke lifted up from the end of the cigar. All federal buildings were now officially smoke-free environments, even this room off of the Senate Foreign Affairs office. But no one was certainly going to tell this Georgia Senator, a highly decorated Colonel, to put his cigar out.

"Well, what do you think?" asked Dr. Holden Kohl.

"I think they'll do well," Beauregard said with his southern drawl.

"No, what do you really think," Kohl said.

Beauregard sat across from the new UN Commander in the Senator's stately Capitol Hill office. Beauregard wore a white linen suit with a canary yellow shirt. While the Senator was a model of personal taste and character, Kohl was an image in dark conformity. Even Kohl's bald pate gave off only a dull gleam over the black rectangular frames he wore. Only the severity of his gaze betrayed the hidden knowledge Kohl kept buried within.

Beauregard laid his cigar on the lip of his ashtray. Between him and Kohl the table before them was covered with the dossiers of pilots and officers from over a dozen countries. Through the light smoky haze he stared at faces that held the promise of a new kind of world.

"I think they represent our best hope for the survival of the United States," Beauregard said.

Kohl smirked. "You're being over-dramatic."

"Am I? Study your western civilization history then. There is a specific reason why we're not speaking Greek or Mongolian right now. Because all great nations, all great empires eventually fall. Why? The incredible cost of supporting the general welfare of the known world bankrupts the country. The tremendous weight of immigration collapses the society. When you are cast into the role of Atlas, the Earth will surely break your back."

"We don't have much competition," Kohl said.

"Then we've got to take a step down. Get back to a level playing field," Beauregard swept his hand over the paper-covered table. "Almost every civilized country in the world is represented here. No longer does every country have to come running to the US every time they have a problem. Now the UN will come to their rescue."

"With American planes and ships," Kohl added.

"A bargain! With these actions we can beef up domestic defense and still reduce our overall defense budget." Beauregard lifted his cigar, pausing before placing it in his mouth. "We'll even be able to throw some more R&D money into the 'black budget' for SDI."

Kohl's eyes lit up for a moment. America's Strategic Defense Initiative had been Kohl's pet project for nearly two decades. Now that had been taken from him, as an even more important assignment had beckoned him away from his pessimistic preparations. A deep sigh escaped him and he returned to the notes in front of him. "You don't have to give me the hard sell Colonel. On recommendation from the President, I've already accepted the position."

Beauregard smiled around his cigar. "We wouldn't be here if you'd refused."

Kohl studied the Senator a moment, trying to decide if Beauregard had intended the veiled threat or if it had simply been accidental. Sometimes men who knew too much suddenly found themselves obsolete. Kohl stared down at his papers, silently reassessing the mind of the man who sat across from him.

"How did your meeting go with President Effingham yesterday?" Kohl asked.

"He's happy with the good press the Rapid Deployment Force is getting. Even though the country will still be paying the bills for the RDF, the idea of passing off responsibility for policing the world is quite popular," Beauregard said.

President George Effingham had been elected on his platform of "America First," riding a wave of nationalism all the way into the White House. After his inauguration he started making good on his campaign promises, cutting foreign aid and defense spending while providing a middle-class tax cut. His budget included huge amounts of federal funds for law enforcement and strict new immigration policies.

Over a year ago, Effingham had approached Beauregard about spearheading changes at the UN. The President wanted to drag the United Nations into a new role where the UN held sway over the international community. Effingham didn't want a world government, rather he wanted to foster a sense of international involvement in the enforcement of international law. And for that, the UN needed bigger guns.

"Some say you've earned a promotion," Kohl said.

"I've turned down such offers before," Beauregard said.

Kohl remembered the huge battle that had been waged on two fronts. The Pentagon had raised holy hell about giving one of their carrier battle groups to a bunch of fuzzy foreign bureaucrats. Congress wasn't too thrilled about this drastic change in foreign policy essentially giving up the crown of world leadership, the hard-won spoils taken by the winner of the cold war.

Somehow Senator Andrew J. Beauregard had pulled off the miracle. Wielding all of his political might in Congress, Beauregard was able to draw together enough support to pass a new law that cut defense spending abroad and transferred part of the savings into a new UN military fund. Calling upon his allies in the Pentagon, the retired Colonel convinced enough generals and admirals that US power overseas was being enhanced, not compromised.

"We won't be able to give them any decent intelligence," Kohl said.

"We?"

Kohl paused. "Changing hats sometimes takes some getting used to. The US and the other major countries have refused to put their intelligence agencies at UN disposal."

"As Commander of the UNRDF it will be your job to be creative when it comes to your intelligence gathering methods," Beauregard said.

Kohl was intimate with the inner workings of the international intelligence community, having worked on several top-secret SDI projects over the years. Dr. Holden Kohl also had held the highest level of security clearance, only "temporarily" suspended since his UN appointment. While countries were eager to donate funds and personnel to the cause, information was the most precious of commodities. All countries, including the US, were hesitant to reveal what they knew, and how they might have obtained such knowledge.

Beauregard finished reading the last officer's dossier and tossed it among the many others he'd looked over this night. "How are you getting along with Chondrapur?"

THE STORY SO FAR (CONT.)

"The Secretary-General is one tough lady. She pulls you in with this soft, lilting Indian-British accent and by the time you realize her trap, it's too late. Passing the reins over to her might be a mistake. She has an agenda all her own. Remember her home is in the East and her vision is clearly centered in that hemisphere."

Beauregard smiled. "And that is just what we want. Our concern, the United States' interest, lies in control of the Western Hemisphere. Everything we need is right here in our backyard."

"Chondrapur may surprise you with her ambition. She lectured me this morning on Benjamin Franklin's original concept of the UN and one world government." Kohl paused, settling back in his chair. "And for a moment, I honestly believed her."

Reaching into the inside pocket of his white suit coat, Beauregard took out a fresh cigar. He did not light it. "I honestly hope that we're working towards a better world. For my grandchildren. We have given you the most powerful military arms the Earth has ever seen. Now we shall see what you can do with this deadly force."

* * *

The '87 Chevy Camaro sped through the crowded Colombian streets. Special agent Santiago Villa glanced over his shoulder, then concentrated once again at avoiding the dense pedestrian traffic. The teeming afternoon crowds spilled out into the streets, hurrying about the shopping district in downtown Cartagena.

"I couldn't tell if they were still behind us," Villa said to his partner, keeping his eyes on the road ahead.

Juan Diego, sitting in the passenger seat, turned around to get a better view out the small back window. Following a half-block behind steamed a large army transport. A squad of Colombian soldiers, carrying automatic weapons, sat at the ready in the back of the truck.

"Yeah, they're keeping up." Diego slouched back down into his seat. Placing the Heckler & Koch 9mm between his legs, he wiped his sweaty palms on his pants before picking the gun back up.

The two Colombian narcotics officers had been investigating the Cali Rojas drug cartel for months, working undercover as employees in one of the cartel's cover companies. The Cali Rojas Corporation was run as brilliantly as any London-based shipping company. Except in this case they had only one export, one business interest. Cocaine.

The Camaro skidded around a corner as Villa tried to make up some time. The storefronts and shops of the downtown had changed to warehouses as they approached the waterfront district. The two agents had tracked this particular drug shipment from the cartel headquarters in Cali to Cartagena. It was the largest they had ever encountered. The agents had expected the cocaine to be shipped out next week by a Greek freighter, but a frantic call from an informant had alerted them to the imminent departure of the drugs on a huge Cuban transport ship.

Villa checked the rearview mirror. The army truck still lumbered behind them.

"Turn left up here, then a quick right," Diego said.

Villa followed his partner's instructions and wheeled the Camaro onto the roadway running parallel to the docked ships. The car fishtailed around the corner as Villa brought it under control. Whipping around piles of crates stacked twice as high as the car, Villa sped down the long avenue.

The Cuban connection gave Villa a bad feeling. High-ranking Cuban military officers had been seen inside the Cali Rojas complex. New structures had even been built on the cartel grounds to house the scores of Cuban soldiers who had begun to arrive there. Training the cartel in the ways of terrorism was bad enough, but something far more sinister was being planned between the Cuban military and Cali Rojas.

Diego sat straight up in his seat. He pointed to a huge freighter anchored next to the dock. Longshoreman scurried about the boat, loading plain wooden crates into her hold. "That's our boat. The *Camona Blanca*, bound for Siguanea, Cuba."

Villa drove right up to the edge of the ship's walkway. Slamming on the brakes, the Camaro skidded sideways to a halt, effectively blocking off the only way onto the ship. Diego opened the car door and ducked down behind, holding his pistol in two hands, making a quick check of any dock workers hovering around in back of the car.

The army truck pulled up behind the Camaro. Soldiers dressed in standard green fatigues filed out both sides of the vehicle. Holding their rifles at the ready, the Colombian soldiers took up positions in a rough semi-circle surrounding the docked freighter.

Inside the car, Villa grabbed the radio mike and switched on the external speaker. "Crew members of the freighter *Camona Blanca* will cease and desist loading procedures immediately. By order of the Colombian government we are coming aboard to search your vessel."

Villa switched the speaker off and replaced the mike. He double-checked the clip in his pistol before slamming it home and chambering the first round. Climbing out of the car, he surveyed the situation. The crew members had temporarily obeyed his order and stopped loading the cargo. The dock workers openly challenged the special agent with amused stares and expressions of disdain. They all seemed to be waiting for something.

Looking to the top of the walkway, Villa saw a group of uniformed men approach the ship's rail. Three soldiers armed with AK-47 assault rifles flanked a well-groomed Cuban lieutenant.

The lieutenant shouted down from the edge. "This is a Cuban cargo vessel exporting agriculture products from Colombia to Cuba. There is no reason to search this ship."

"Transporting cocaine or related agricultural products is against the law," Villa said.

"I repeat, this is a Cuban ship under our military's protection. Colonel Raul Bautista is personally overseeing this operation. I would advise you to not test our patience this day."

Villa began to grow infuriated, strengthened by 25 armed men deployed around him. "What do your superiors think, sending armed soldiers to Colombian soil. Is Cuba declaring war on our fair country?"

"Just the opposite," the lieutenant said. "We are trying to foster new trade alliances with some of Colombia's largest corporations. The Army is here simply to protect our investment."

Villa knew this conflict would not be resolved with words. With a quick signal to the strike team, Villa and Diego prepared to open fire on the armed guards. Then the dock began to vibrate faintly. A deep resonant sound seemed to come from the very bowels of the freighter. Slowly the rumbling grew as Villa sought to find its source.

Rising from behind the freighter hovered two Russian Hind gunships. The fast-attack helicopters came about and moved into position between the ship and the Colombian officers. 20mm cannons came to bear on the agents and surrounding soldiers.

Villa did not drop his gun to the ground as most of his men did. He and Diego climbed into the Camaro and slowly pulled the car around to follow the army truck. Villa could tell by the noise that the gunships continued to escort them down the dock road. There would be no Colombian response to this act of aggression. The alliance between Cuba and Cali Rojas had won its first battle, and the spoils of victory sailed onward through the Caribbean.

* * *

Ripping the blade out of the soldier's sternum, Major Mario Salvadore released his grip and let the dead body crumple to the ground. He leaned down to wipe his knife off on the Argentinean's uniform. He didn't bother to frisk his enemy, there would be plenty of time later to scavenge among the dead.

It was still dark in the pre-dawn hours in Rancagua. Salvadore reached over to pick up his French assault rifle, a FA MAS.

He pulled the clip out and saw it filled with 5.56-mm rounds. Slamming the clip home, he settled back against the alley wall to collect his thoughts.

It had been two weeks since Salvadore's plane had been shot out from under him. After that attack on the illegal nuclear arms sale, he had made his way over the Argentinean border and back to his command headquarters in Rancagua. Unfortunately, Argentina's 33rd armored cavalry division had rolled through Rancagua two days ago. After the powerful Argentinean airforce had softened up the inadequate Chilean defense perimeter, tanks and heavy artillery had come across the border. A flood of infantry had stormed through aboard army transport vehicles, preceded by paratroopers dropped behind the Chilean lines.

The Chilean army had started with little organization and almost no command structure now remained. President Maceda had been in Brazil, meeting with other South American diplomats when Argentina's invasion had commenced. Now the Chilean President was in exile in Rio de Janeiro, trying to restore order from there. With little armed forces to speak of, Chile faced an almost impossible task in trying to expel the Argentinean invaders.

Devastation lay all around Rancagua and the surrounding areas. Communication had been cut off since the incursion and he had been unable to raise anyone on a salvaged field radio set. Operating as both sniper and assassin, Salvadore hoped to learn as much about the Argentinean campaign as he could while he went about picking off selected enemy targets.

The same intelligence sources that had been used to coordinate his strike missions had also briefed him on other developments. The Argentinean army had been stockpiling arms and buying new equipment from their French and Russian suppliers ever since the Falkland Islands War. Tucked away down in South America, no one had paid much attention to their quiet preparations for invasion.

An Argentinean Mirage fighter roared past overhead, bringing Salvadore back out of his reverie. He was a soldier, but he was also very tired. Salvadore couldn't recall the last time he'd slept. With effort he rose from the ground, sliding up against the grainy alley wall. Hefting his backpack, Salvadore slipped it over his left shoulder, carrying his rifle in his right hand. He stared at the dead Argentinean soldier for only a moment before moving on. It would be light soon and Salvadore needed to find a safe hiding place.

* * *

Commander Holden Kohl was a rare individual in many respects. Like Napoleon and Mozart, Kohl only needed 3 or 4 hours of sleep per night. He was at his best around two in the morning, working voraciously while the world slept. It was quite rare to be interrupted at this hour. When the soft knock came at his door, he knew it was important.

"Come in."

Suni Chondrapur opened the door and walked into his office. Though diminutive in size and delicate in features, she projected a distinct aura of authority. Even after an eighteen hour day, scarf untied laying across one shoulder, the UN Secretary-General still looked crisp and alert.

"It looks like we're going into action sooner than expected," Chondrapur announced.

Kohl couldn't hide his irritation. "I just got back from Washington yesterday. The crew has only been aboard the carrier a week, not counting the pilots who haven't reported yet. They still have two weeks of orientation before starting their training exercises."

"The best teacher is experience. I'm sure they will be up to the challenge," Chondrapur said, leaving no room for debate.

Kohl wasn't used to taking such orders without discussion. He wanted to scream at her *This may be how you do things in your part of the world, but not mine!* Instead he took a deep calming breath and brought his raging thoughts back into line.

"Where are we sending the RDF?" Kohl asked.

"The Caribbean. More specifically, Cuba. President Effingham called me earlier today. Apparently the US is about to be besieged by a cocaine smuggling campaign led by the Cuban military and Colombian drug cartels. Because of the delicacy of the United States' position in the current World Trade negotiations, the President has asked the UN to intervene."

"The US can't risk a show of force or the Chinese delegation will cry foul," Kohl said.

"That's correct. I'll give you a full briefing in the morning. There will be sufficient time for you to draft a military plan of action, a window of at least three days." Chondrapur hadn't moved during the discussion, standing at rapt attention as though giving an address.

Kohl swallowed his rebuke and simply nodded his agreement. He knew perhaps better than she what potential military conflicts hovered beyond the horizon. Chondrapur turned and walked out of the room. Kohl took another deep breath and reached for his private, secured phone. There were other factors to consider before taking those first fateful steps into the new world.

* * *

Captain Conrad Roenick looked over his notes one more time. First impressions were important, especially those involving military command. Roenick was born with attitude, but a sputtering CO who couldn't remember his briefing didn't garner much respect from his troops.

The Peacekeeper seemed more alive now that the crew had arrived. Glancing up from his desk in the briefing room, Roenick looked out at his squadron. Over a dozen nationalities were represented in the room. Roenick had made an extra effort to speak to each pilot individually before today. He thought it was important to get to know his pilots on a personal level before he started giving them orders as their captain.

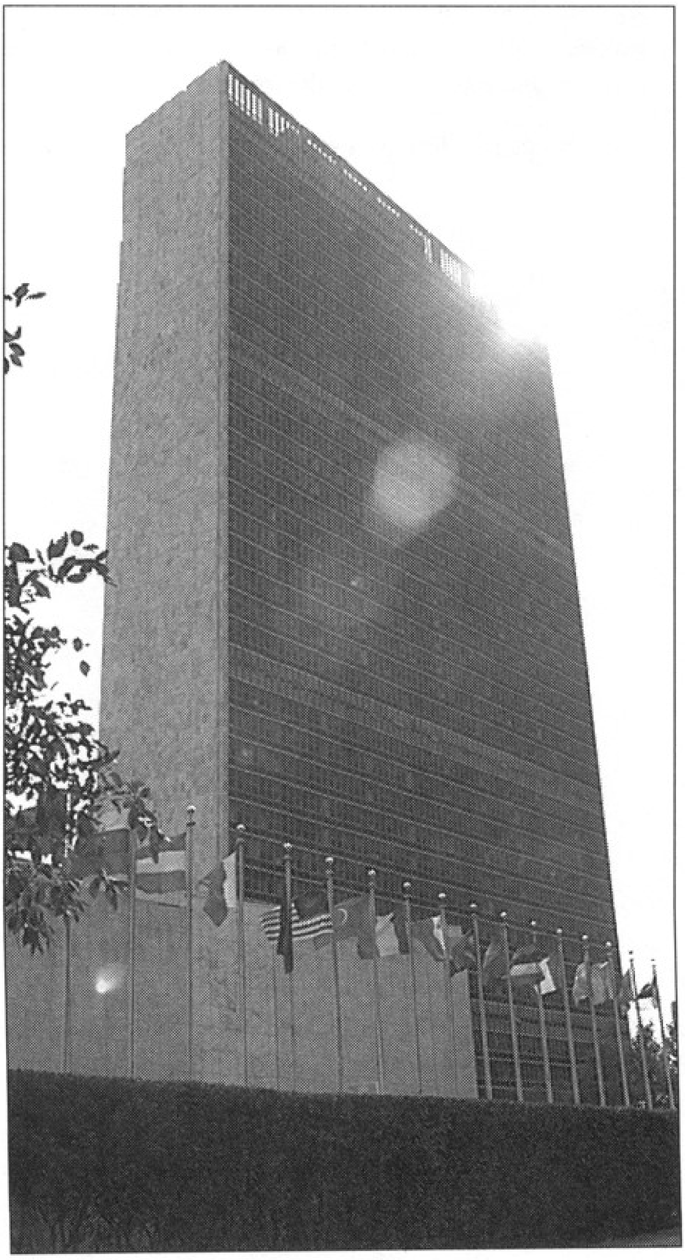
Roenick checked the updated attendance record. Only one pilot had failed to report for duty. Mario Salvadore from Chile was still unaccounted for.

He saw the rest of the pilots milling about the room, anxious to size up the competition on board. Von Stern and Barak were already discussing strategy as Wu and Akuda traded jokes with one another, even getting Fedorev to laugh out loud. Roenick felt that twinge of loneliness as his command kept him clearly separated from that circle of camaraderie. There was a time for making friends and a time for taking responsibility. Roenick stood up and walked over to the lectern.

"All right people, let's get started."

RAPID DEPLOYMENT FORCE

The Rapid Deployment Force was created to secure global peace. Understanding its main objectives, leaders and proponents are critical to surviving in the system. This section will brief you on the history and individuals who make up the RDF.



CREATION OF THE RDF

The United Nations' new strategic rapid deployment Rapid Deployment Force (or RDF) was created in 1998 by unanimous resolution of the UN Security Council. According to the resolution, the primary goal of the RDF was:

"**Section 3.23 Purpose.** The Rapid Deployment Force created herewith shall be known by the shortened anacronym of RDF; shall be funded through requisite annual budgeting method set forth in Section 32.847 herein; shall be limited in scope to the rules of authorization and engagement as for provided in Article 16, paragraph 15 of the UNRSW; and shall continually strive to achieve the primary objective of securing the peace, health, safety, and welfare of individuals and nations throughout the globe by utilizing any effective methods available to it including but not limited to the calculated use of deadly force when necessary."

This rather winded purpose was later shortened into the RDF's moto:

"Global Peace Through Deadly Force"

ARMING THE RDF

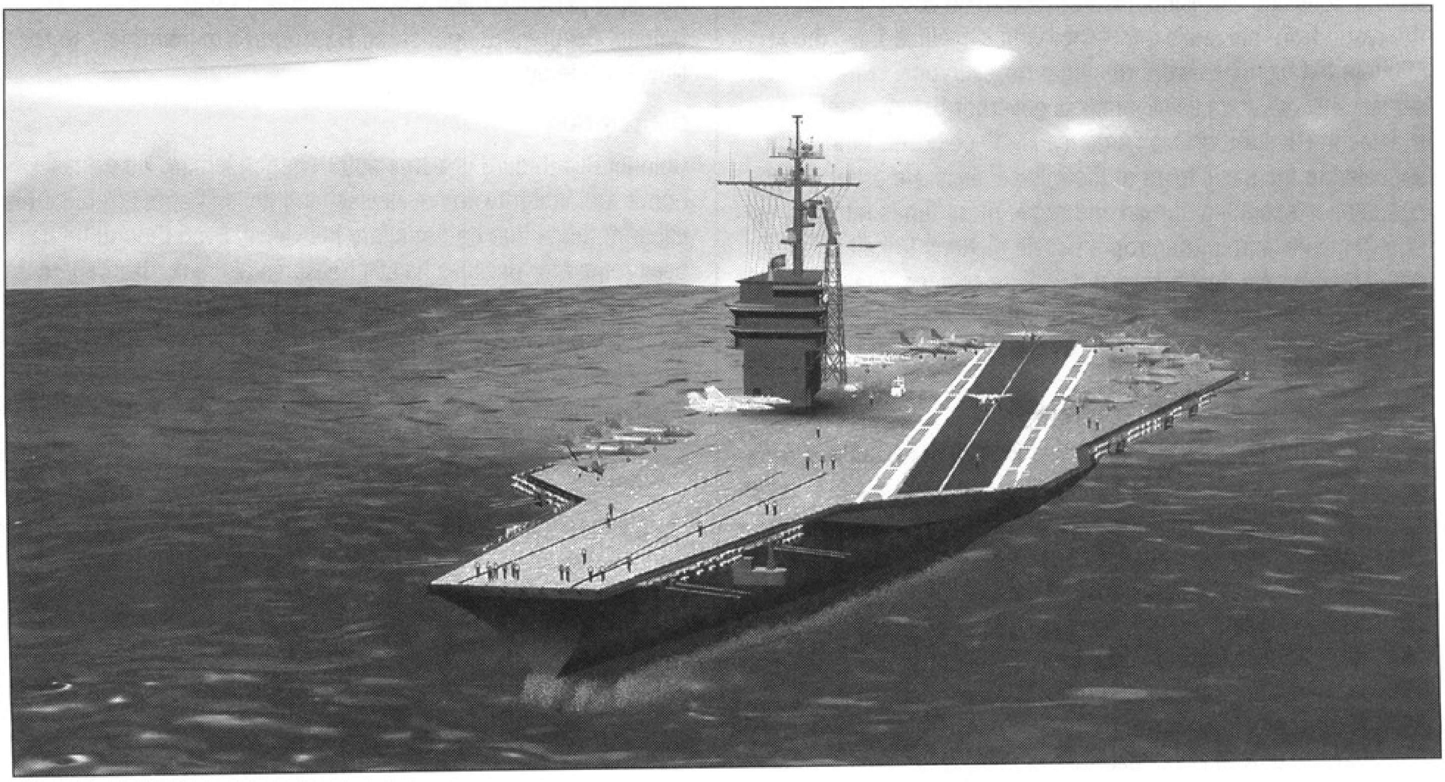
At its inception, the RDF was a military unit without any weapons. The United Nations didn't have the resources to properly equip the squad, and other UN commanders were unwilling to offer anything more than a few token weapons. Consequently, the RDF was little more than an idea for the first few months of its existence.

Then, in the Fall of 1998, America's newly elected President George Effingham embraced the languishing RDF as part of his "America First" platform. He believed that the Rapid Deployment Force would be the ideal way to shift the responsibility of "global policeman" from the US to the United Nations. He convinced several powerful congressmen, including the distinguished Colonel Andrew Beauregard, to spearhead the appropriations through the Senate Foreign Affairs Committee. After a long and bloody battle, Beauregard was able to muster enough support to pass legislation to shift a sizable portion of domestic military spending into a new UN military fund.

This fund was the basis for rejuvenating the RDF, but was inadequate to really create a quick response force. It soon became apparent that the RDF needed a powerful aircraft carrier to act as its mobile base of operations. After months of arguing and stalled negotiations, the Rapid Deployment Force was poised to collapse. President Effingham, Senator Beauregard and other political heavy-weights met in lengthy close-door meetings, trying to rescue their investment. America finally conceded and donated a Nimitz-class aircraft carrier. The ship, headed by Captain Dwight Davenport, was renamed to the UNS Peacekeeper and immediately pressed into service.

ORGANIZING THE RDF

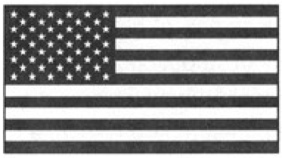
Arming the Rapid Deployment Force was only the first step, however. The next hurdle was to create the organizational hierarchy. The UN's Secretary General Suni Chondrapur was clearly its formal head, but a separate commander had to be appointed. After a lengthy search, Dr. Holden Kohl was chosen as the civilian commander. Although a controversial choice because of his political views and intelligence background, he was backed strongly by President Effingham and key international figures. A few nations objected to an American leader, but there was little debate since the US was footing most of the bill.



RAPID DEPLOYMENT FORCE (CONT.)

KEY LEADER PROFILES

The following are the highly confidential profiles of certain key members of the American government and the United Nations. This information should not be distributed.



GEORGE W. EFFINGHAM

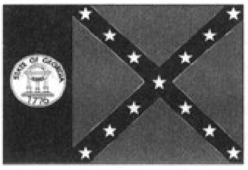
Title/Rank:	President of the United States
Nickname:	None
Nationality:	United States
Birthplace:	Jackson Hole, Wyoming
Age:	62
Height:	5'11"
Weight:	205
Hair/Eyes:	Brown/Brown

Background

George Effingham grew up on a cattle ranch in the wide open acres of Wyoming. As a rancher's son, young George was not allowed to watch television. Instead he learned about the state of the world from his uncle and father who explained that "those idiots in the big cities were ruining it for everyone." Effingham served only one term as Wyoming's governor before running for President. Running on his "America First" platform, Effingham appealed to the basic fears of the middle class. He promised to cut defense spending abroad and move more funds into aggressive domestic anti-crime programs. He pledged to halt immigration, and with the health care and welfare savings, grant a much needed middle-class tax cut. After a bitter campaign, Effingham won a landslide victory, carrying 47 out of 50 states.

Description

It is a Fortress America mentality that President Effingham leads into the 20th century. He abhors conflict, especially when it is for an "ideal" or "cause." He makes grandiose speeches about the virtues of independence, but for all of his rhetoric his concern rarely focuses past the boundaries of the US. Effingham is a very average looking white American male. Although effeminate, he is still the most eligible bachelor in the country. His appeal to female voters was not so much of physical charisma as of availability. Surrounded by a throng of his supporters, it is sometimes hard to pick the President out of the crowd.



COLONEL ANDREW J. BEAUREGARD

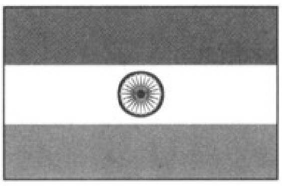
Title/Rank:	Senator
Nickname:	Colonel
Nationality:	United States
Birthplace:	Athens, Georgia
Age:	66
Height:	6'0"
Weight:	175
Hair/Eyes:	Blond/Blue

Background

Beauregard is one of the most powerful men in Washington, chairing the Senate Foreign Affairs Committee for the past 5 terms. He has a personal friendship with Captain Dwight Davenport as Colonel Beauregard sponsored Davenport's appointment to the Naval Academy.

Description

Colonel Beauregard is a true southern gentleman. He values honor and integrity above all else, and he isn't afraid to rattle his saber at those that do not share his views. Even though he has been retired for decades he still treasures his rank. Beauregard is tall and regal with a snow-white handlebar mustache. He insists on wearing his hat at even the most informal of occasions. Beauregard's slow, southern drawl only seems to emphasize his stringent political views.



SUNI CHONDRAPUR

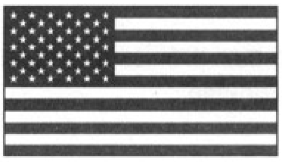
Title/Rank: Secretary-General of the United Nations
Nickname: Bengal Tiger
Nationality: East Indian
Birthplace: Madras, India
Age: 58
Height: 5'2"
Weight: 115
Hair/Eyes: Brown/Brown

Background

Suni Chondrapur has proven to be one of the most successful UN Secretary Generals in history. Her masterful diplomatic negotiation of a new World Free Trade Agreement earned her the nickname "The Bengal Tiger". Chondrapur rose quickly in the Indian government. Unwavering confidence and resolve in trade diplomacy allowed Chondrapur to forge Madras into the export capital of South Central Asia. She was an overwhelming choice as Secretary General to help chart a new course for the 21st century.

Description

Chondrapur is a financial wizard with a quick, analytical mind. There is a sense of overwhelming confidence about her, and for various reasons she has the support of all the major countries including the G-7 members and permanent Security Council seat holders. Chondrapur is a petite woman who speaks with a soft, lilting East Indian accent. She tends to wear dark business suits contrasted with traditional Indian accessories, such as a colorful neck scarf.



DR. HOLDEN KOHL

Title/Rank: UN Civilian Commander
Nickname: None
Nationality: United States
Birthplace: Freiburg, Germany
Age: 63
Height: 6'2"
Weight: 175
Hair/Eyes: Bald/Hazel

Background

The son of an Air Force Colonel, Holden Kohl was born on a US military base in Freiburg, Germany. He was a professor of Particle Physics at M.I.T. for the past thirty-three years where he served as the head of the Strategic Defense Initiative before it was cut. Kohl is famous for his book called "The Throne of Dreamers" which tells how a benevolent oligarchy of technological elite could lead the world into a new golden age. One reviewer called it "a cross between the Encyclopedia Britannica and Mien Kampf."

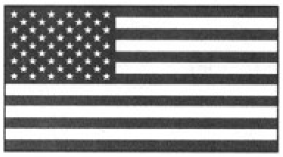
Description

Kohl is a man who understands secrets, and it is apparent to anyone who meets him that he has many. Of course, this tightly drawn veil of secrecy lends itself to distrust and unease by others. Some have even said that it seems that there is something sinister lurking just beneath the surface. Kohl has an outstanding record as a deft leader, but his appearance does not convey military power. A thin man with a bald pate and rectangular glasses, Kohl is not an imposing figure.

RAPID DEPLOYMENT FORCE (CONT.)

KEY RDF PROFILES

The following are the highly confidential profiles of certain key members of the Rapid Deployment Force. This information should not be distributed.



DWIGHT D. DAVENPORT

Title/Rank:	Captain UNS Peacekeeper
Nickname:	Big Hurt
Nationality:	United States
Birthplace:	Detroit, Michigan
Age:	41
Height:	6'4"
Weight:	250
Hair/Eyes:	Black/Black

Background

Captain Davenport was on the fast-track to becoming an admiral before his appointment to the UN. Since it was "his" aircraft carrier that the US government donated to the new Rapid Deployment Force, Davenport was the natural choice for the command.

Description

Davenport hasn't had a moment of self-doubt since he entered Annapolis. One of the Navy's finest officers, he is well aware the RDF will have it's share of hard battles ahead. Physically, Davenport is an odd contrast. He is built like a mountain from the shoulders down, but his face looks like a math professor. Appearance aside, everyone who has met him knows that Davenport is as serious as a heart attack.

CONRAD ROENICK

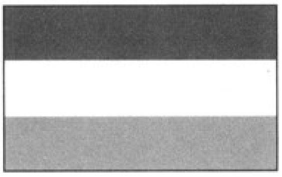
Title/Rank:	RDF Squadron Commander (Captain)
Nickname:	The Bruiser
Nationality:	United States/Canada
Birthplace:	Vancouver, British Columbia
Age:	43
Height:	5'9"
Weight:	175
Hair/Eyes:	White/Blue

Background

Conrad Roenick is a tough-as-nails blue-collar leader. He is a throwback to those soldiers of the classical age when a man had to look his enemy square in the eye before he took his life. Although he is Canadian-born, Roenick served with the United States Armed Forces. Roenick started out flying patrol with the DEA when the East Asian Triads began smuggling drugs through Alaska, the Yukon and British Columbia. On permanent loan from Canada, Roenick shares a rare dual-citizenship with both countries. However his heart (and NHL hockey allegiance), shall always remain Canadian.

Description

Roenick reminds one of an ancient mariner looking for a fight. He always is in tremendous shape with a shock of white hair kept in a tight crew cut. When aggravated, Roenick has been known to do a great impression, though not on purpose, of a professional wrestler named "Dick". He recently quit smoking, but he still craves a good cigar.



LASZLO CAPOSU

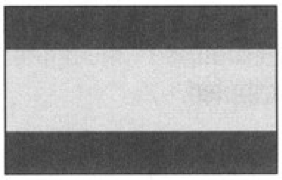
Title/Rank:	Air Boss
Nickname:	Taz
Nationality:	Hungarian
Birthplace:	Cluj, Hungary
Age:	36
Height:	5'7"
Weight:	160
Hair/Eyes:	Black/Brown

Background

Caposu struggled to survive in the post-Soviet years in Eastern Europe. Living during those lean times taught Caposu to be quite frugal. They were especially painful for the former Red Army soldier as he buried both his children in one single year.

Description

Caposu is an insatiable perfectionist. He is never satisfied with the performance of his staff or the pilots. Demanding excellence, Caposu runs the flight deck like a mad man barking out commands. His only joy comes with the sight of a clean F-22N crouched in ready upon the flight deck. Hot tempered and hairy, Caposu is said to look like a Tasmanian devil when he gets mad.



JOSE GARCIA de la SANGRIA

Title/Rank:	Landing Signal Officer
Nickname:	Bull
Nationality:	Spanish
Birthplace:	Pamplona, Spain
Age:	33
Height:	5'11"
Weight:	280
Hair/Eyes:	Brown/Brown

Background

An outstanding aviator in his younger days, Sangria was considered to be the best pilot in the Mediterranean. He served with Spain's elite Red Sky for seven years before he was asked to train younger pilots. In that position he developed a well deserved reputation for a keen eye. With his experience, Sangria's appointment as LSO aboard the UNS Peacekeeper was an obvious decision.

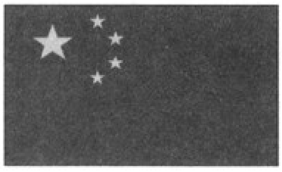
Description

Sangria is an affable man who seems to get along with almost everyone. He is quick with a smile and a joke, but knows when to get down to business. Sangria has put on some weight since his "retirement" earning him the nickname of "Bull" among the pilots. Given his girth, some have asked him whether the bulls chased him or he chased the bulls during his hometown's celebration.

RAPID DEPLOYMENT FORCE (CONT.)

KEY PILOT PROFILES

The following are highly confidential profiles of the fighter pilots currently serving aboard the UNS Peacekeeper. This information should not be distributed.



SUNG DUK WU

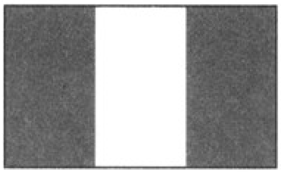
Title/Rank:	Pilot
Nickname:	Duckie
Nationality:	Chinese
Birthplace:	Beijing, China
Age:	23
Height:	5'7"
Weight:	150
Hair/Eyes:	Black/Brown

Background

Wu is a Chinese national. His sister, a student dissident, is currently imprisoned for demonstrating against China's human rights violations. One of his country's best pilots, Wu has been uncharacteristically outspoken of his government. He sees the RDF as an opportunity to put more pressure on the Communist system. Not surprisingly, the Chinese government was pleased to send Wu to the United Nations.

Description

Wu not only has deep political convictions but religious as well. As dictated by his particular Buddhist sect, Wu keeps his head shaved. During the entrance tests for the RDF, his grades were excellent, but there is concern that he will try to avoid combat. In particular, Wu has openly admitted that he will let an enemy plane escape if it's critically damaged. He believes that it's the moral thing to do.



JOAQUINA MUBARIC

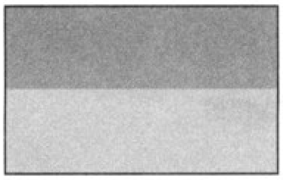
Title/Rank:	Pilot
Nickname:	Jaguar
Nationality:	Nigerian
Birthplace:	Kano, Nigeria
Age:	28
Height:	5'7"
Weight:	135
Hair/Eyes:	Black/Black

Background

Mubaric grew up in a wealthy upper-class family in Nigeria with strong ties to the French government. She was able to fly relatively new French planes in the Nigerian Air Force. Mubaric has probably logged more hours than any other pilot in the RDF, but her actual combat experience is limited.

Description

Mubaric speaks her English with a slight French accent. She is known as a good listener and cares deeply for everyone in the RDF. Mubaric is a superior pilot, but a poor marksman in heavy combat. In particular, reports say that Mubaric tends to use her missiles too frequently.



IVAN FEDOREV

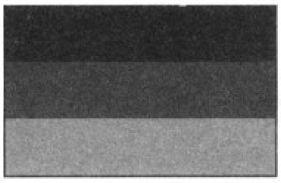
Title/Rank: Pilot
Nickname: Bear
Nationality: Ukranian
Birthplace: Zhitomir, Ukraine
Age: 33
Height: 6'3"
Weight: 215
Hair/Eyes: Blond/Blue

Background

Fedorev hails from the northern reaches of the Ukraine.
He served in the Red Army as a test pilot for the next generation of MiG fighters. Unfortunately, huge cuts were made in defense spending and the Ukraine found it had more veteran pilots than working aircraft. Even a valuable test pilot such as Fedorev became expendable for UN appointment.

Description

Fedorev is a bear of a man. Wide of girth without being overweight, Fedorev keeps a long beard all year round. He is also quite fond of Tolstoy, especially passages from "Death of Ivan Illych." Fedorev thinks "War and Peace" ended too suddenly. As a pilot, he is experienced and savvy. Fedorev is a talented wingman and a formidable foe. His steady shot is at its best in a big furball.



LOTHAR VON STERN

Title/Rank: Pilot
Nickname: Thor
Nationality: German
Birthplace: Bonn, Germany
Age: 29
Height: 6'0"
Weight: 175
Hair/Eyes: Blond/Blue

Background

In this elite cadre of the world's finest pilots, Stern is the best. He brims with pride and self-confidence. A skilled tactician, he leads in one way—by example. He has tremendous natural talent and skill. Stern's only weakness is that he is overly aggressive in combat, breaking formation early and leaving his wingman.

Description

Stern looks like he walked out of some mythic Germanic fable. With blond hair and blue eyes, his good looks are only matched by his enormous pride. Some people snicker behind Stern's back, calling him a closet fascist. Even though it's not true, the name does not seem to bother him.

RAPID DEPLOYMENT FORCE (CONT.)

ISAO AKUDA

Title/Rank: Pilot
Nickname: Stick
Nationality: Japanese
Birthplace: Kyoto, Japan
Age: 26
Height: 5'9"
Weight: 135
Hair/Eyes: Black/Brown

Background

Akuda comes from a long line of successful Japanese pilots. His upbringing was very traditional, but Akuda wanted to become "westernized." After graduating at the top of his class, he attended college in the United States. It was there that he developed a very sarcastic sense of humor.

Description

Akuda is extremely thin and eating constantly. His fellow pilots tease him that he always has some type of food in his mouth. Akuda even carries snacks with him on missions just in case he gets hungry during the action. He is a skilled and reliable pilot, but performs somewhat less effectively at night. Akuda is probably the best precision bomber in the RDF.

JOSEPH TANIOS

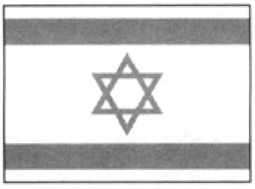
Title/Rank: Pilot
Nickname: Tanny
Nationality: Egyptian
Birthplace: Alexandria, Egypt
Age: 44
Height: 5'10"
Weight: 195
Hair/Eyes: Brown/Brown

Background

Tanios is the oldest pilot in the squadron by far. Tanios was placed there by the UN and Egypt to serve as "veteran leadership" within the squadron. He has the most combat experience in both aerial dogfights and bombing missions. Tanios is an expert at identifying enemy aircraft and their armaments.

Description

Tanios is just beginning to show his 44 years. A bit grizzled around the edges, even his tight, curly hair is beginning to thin as his waistline grows a bit wider. Tanios has fought both public and "unauthorized" sorties against many Middle Eastern opponents, and is quite skilled.



MORDECHAI BARAK

Title/Rank: Pilot
Nickname: Grendel
Nationality: Israeli
Birthplace: Haifa, Israel
Age: 28
Height: 5'11"
Weight: 175
Hair/Eyes: Black/Green

Background

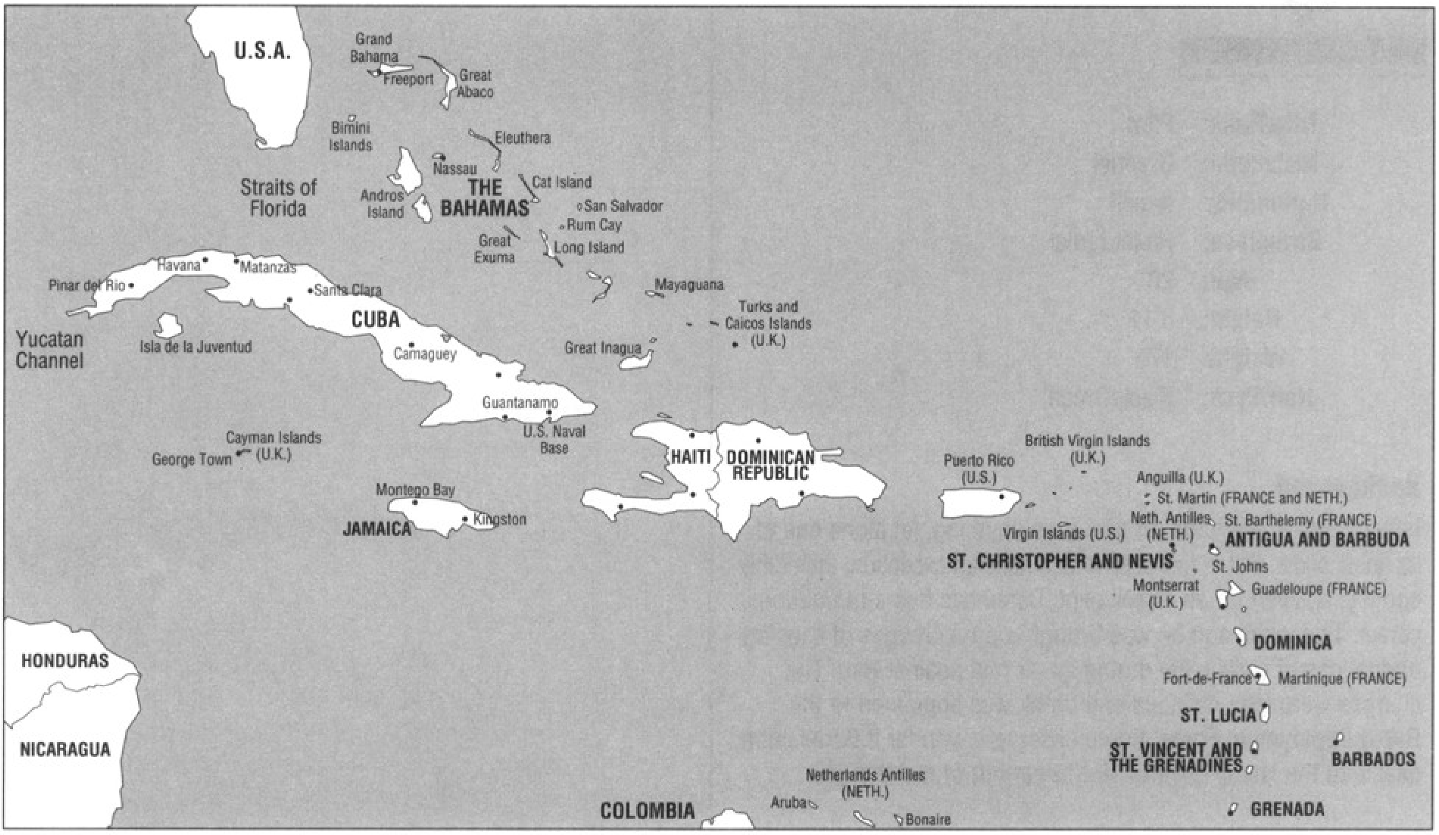
Israel is not in the habit of giving up anything, let alone one of its finest pilots. But in this case Israel made an exception. Incredibly egotistical, even for an Israeli pilot, Barak has had a tumultuous career. Two years ago he was brought up on charges of causing undue loss of civilian life during an air raid against Iraq. The charges were later dropped and Barak was appointed to the Rapid Deployment Force. Some observers wonder if Barak cut a deal with the Israeli government to get out of the charges.

Description

Barak is dark and handsome. He has long black locks of ebony hair that frame his chiseled olive-skinned features. Barak is a great pilot, second only to Stern. Perhaps a bit too aggressive, he has few weaknesses. Barak is at his best when allowed to "freelance." The RDF report says that he is less effective when acting in a supporting role, often losing his concentration from boredom.

CAMPAIGNS

JetFighter III is a campaign-based combat simulator. As a pilot in the RDF, you will be sent to various hot spots around the globe as conflict erupts. Each conflict area or "campaign" will have several missions with varying objectives. The two campaigns contained in JetFighter III are discussed below.


U.S.A.
Grand Bahama
Freeport
Great Abaco
Bimini Islands
Eleuthera
Nassau
Straits of Florida
Andros Island
THE BAHAMAS
Cat Island
San Salvador
Rum Cay
Great Exuma
Long Island
Havana
Matanzas
Pinar del Rio
Santa Clara
Mayaguana
CUBA
Turks and Caicos Islands (U.K.)
Yucatan Channel
Isla de la Juventud
Camaguey
Great Inagua
Guantanamo
U.S. Naval Base
Cayman Islands
George Town (U.K.)
HAITI
DOMINICAN REPUBLIC
Montego Bay
Kingston
JAMAICA
British Virgin Islands (U.K.)
Puerto Rico (U.S.)
Anguilla (U.K.)
St. Martin (FRANCE and NETH.)
Neth. Antilles (NETH.)
St. Barthelemy (FRANCE)
Virgin Islands (U.S.)
ANTIGUA AND BARBUDA
ST. CHRISTOPHER AND NEVIS
St. Johns
Montserrat (U.K.)
Guadeloupe (FRANCE)
DOMINICA
Fort-de-France
Martinique (FRANCE)
HONDURAS
ST. LUCIA
NICARAGUA
ST. VINCENT AND THE GRENADINES
BARBADOS
Netherlands Antilles (NETH.)
COLOMBIA
Aruba
Bonaire
GRENADA

CUBA — Operation Hurricane

Operation Hurricane is the first campaign in JetFighter III. It is set in the Caribbean just off the coast of Cuba. You will be flying with the RDF against elements of the Cuban military who are escorting Colombian drug traffickers.

THE SITUATION

Cuba and the Colombian drug cartels have formed a deadly alliance. Cuba has an abundance of Soviet military equipment with a state economy on the brink of collapse. The cartels have a product worth tens of billions of dollars, but cannot get it past the tightening US coastal security presence. Intelligence believes that these two groups have joined together. Cuba began by escorting drug boats and airplanes into the Caribbean, but its efforts have recently expanded. The Cuban military has become increasingly bolder, even venturing into the outer perimeter of American airspace.

This situation is poor timing for the United States government. America could handle this problem on its own, but there is much to lose on the international scene. The US cannot risk an international incident while it is trying to negotiate a new world trade agreement. The current administration is unwilling to risk international reprisals by responding with force to these blatant border incursions.

As you know, the US invested heavily in the United Nations Rapid Deployment Force and now it wants to see a return on its investment. UN Secretary General Chondrapur personally guaranteed that the problem will be discretely resolved by the Rapid Deployment Force.

ROOTS OF THE CONFLICT

When Fidel Castro seized power in Havana in January 1959, the Soviets didn't believe that any Latin American country could successfully sustain a communist regime. Yet over the next several decades the USSR became a staunch ally of Cuba, even sending the world to the brink of nuclear war by placing missiles on the island nation. Throughout the 1970's and 1980's Cuba supported and fought for the socialist cause in places like Africa and South America, directly opposing the United States in these armed revolutionary conflicts.

Raul Bautista was one of the young rebels who helped Castro bring the socialist movement to fruition in Cuba. An idealist tempered by tragic discipline, Bautista was a privileged party member during the flourishing years of communism. With a steady stream of Soviet equipment and advisors, Bautista learned all he could about subversion and warfare from his Red Army allies.

However, the economic and political landscape changed with the collapse of the Soviet Union in 1991. No country felt the loss greater than Cuba, whose government had grown reliant upon Soviet assistance. Suffering financial troubles, the Russian government discontinued nearly all of its aid to former Cold War allies, effectively stranding Cuba in the Western Hemisphere.

Today the Cuban economic system stands on the brink of collapse. With the $4 billion dollar Soviet subsidy gone, it now is saddled with billions of dollars in debt. The communists still retain their hold on Cuba, but they are finding it increasingly difficult to satisfy the populace. The country is also in jeopardy of being shut out of the new world economic order of regionalized trading partners.

Cuba's communist military leaders realized that they had to find a short-term solution to their cash-flow problems. For his part, Colonel Raul Bautista looked into Cuba's past. He recalled that during the 1960's Cuba had positioned itself as a transportation center for Red China heroin on its way into the US. This history lesson was foremost in his mind when he visited drug lord Hector Moreno at his estate. After weeks of negotiations, it became apparent that certain elements of the Cuban military were acting as the protectorate of the Cali Rojas drug cartel.

Cali Rojas is the most powerful drug cartel in Colombia, effectively controlling all cocaine exports from that country. The head of the Cali Rojas is Hector Moreno. Moreno inherited control over the drug cartel from his father after he was killed by a rival family. Throughout his tenure, Moreno has struggled with the problem of transportation. He believes that the demand is there, but he has not been able to move enough "product" to market. In particular, the United States has increased its coastal security, making it even harder to import his cocaine. It became clear that more muscle was required.

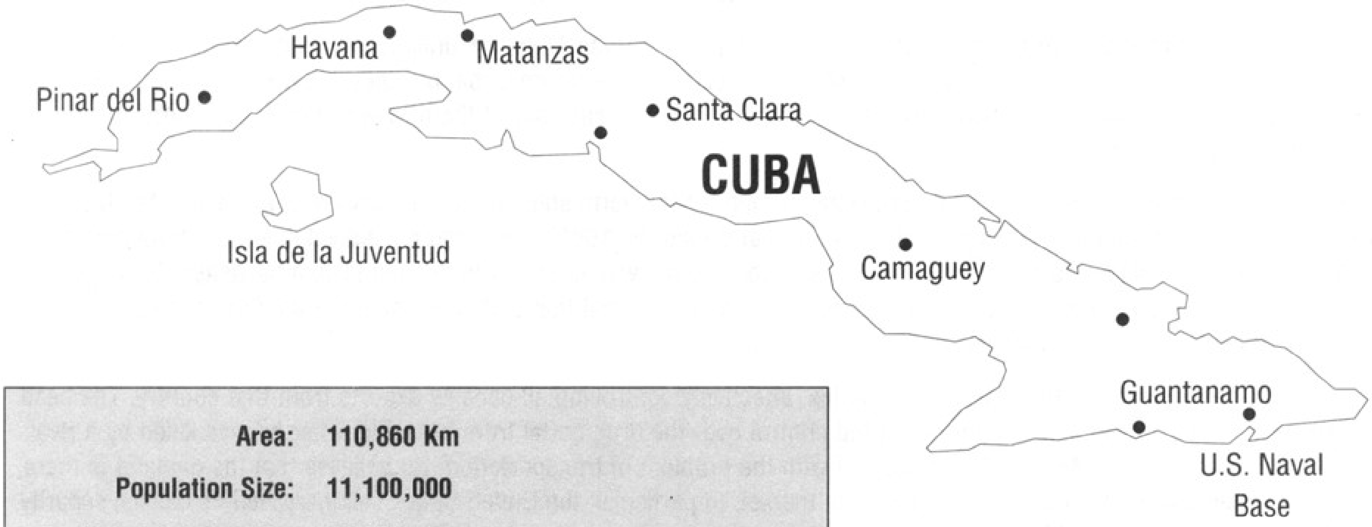
The situation became serious for Moreno after his largest ship, the *Telajis*, was sunk by the US Coast Guard. The loss of the the *Telajis* cost him nearly a hundred million dollars. Angry and frustrated, Moreno began actively looking for a "partner". Word was spread throughout the community and ultimately was passed to Raul Bautista. Following a hunch, Colonel Bautista visited Moreno and proposed a joint venture. Moreno seized upon the idea and laid out a comprehensive plan to use Bautista's idle military to help get the cartel's product to the US. With tens of billions of dollars in potential profit, neither side could refuse. An agreement was reached within a few weeks.

INTELLIGENCE

The Colombian government agreed to assist the United Nations. They will be providing the RDF with their intelligence on drug shipments and schedules, but don't expect anything too reliable. The drug cartels account for over 15% of the country's Gross Domestic Product and they have tremendous influence.

Similarly, the United States will provide intelligence on a need-to-know basis. It is their belief that only a rogue faction of the Cuban military (lead by Colonel Raul Bautista) is involved. Up to this point, they have been unwilling to divulge much more. US intelligence resources are conditionally not available to the RDF.

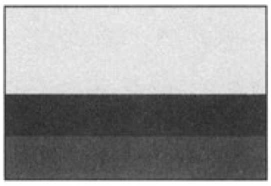
United Nations' intelligence knows little about Cuba. As the former USSR's main foothold in the Western Hemisphere, there still is an abundance of Soviet aircraft and equipment on the island. Insiders close to the Cuban government claim that Bautista is acting without orders. But Bautista's units appear to be well equipped and ready for combat.



Area:	**110,860 Km**
Population Size:	**11,100,000**
Population Density:	**100 /Km**
Capital:	**Havana**
Ethnic Groups:	**51% mulatto, 37% white, 11% black**
Chief Language:	**Spanish**
Religion:	**85% Roman Catholic (suppressed by communists)**
Literacy	**98%**
GDP:	**$20,900,000,000**
Per capita:	**$2,000**
Exports:	**sugar, nickel, fruits, shellfish, tobacco**
Imports:	**petroleum, capitol equipment, industrial materials**

KEY LEADER PROFILES

The following are highly confidential profiles of key political figures involved in this campaign. This information should not be distributed.



HECTOR MORENO

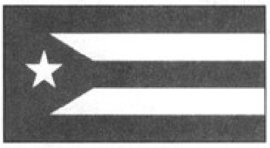
Title/Rank:	Head of Cali Rojas cartel
Nickname:	None
Nationality:	Colombian
Birthplace:	Cali, Columbia
Age:	33
Height:	6'1"
Weight:	190
Hair/Eyes:	Brown/Blue

Background

Moreno was born into the cartel and cultivated from an early age to run the family business. He was sent by his father to the University of Chicago where in just 5 years he received his undergraduate degree and MBA in international trade. He left America abruptly when his father was killed by a rival drug cartel. Since his ascension, Moreno has positioned the Cali Rojas as the major cocaine syndicate in all of Columbia.

Description

Moreno appears much as he did in college, a studious individual. He would not appear to be one of the world's most ruthless and richest men. Spurning ostentaiousness, he wears silver wire frame glasses and keeps his hair cropped short.



RAUL BAUTISTA

Title/Rank:	Colonel
Nickname:	(does not translate)
Nationality:	Cuban
Birthplace:	Havana, Cuba
Age:	57
Height:	5'10"
Weight:	210
Hair/Eyes:	Brown/Brown

Background

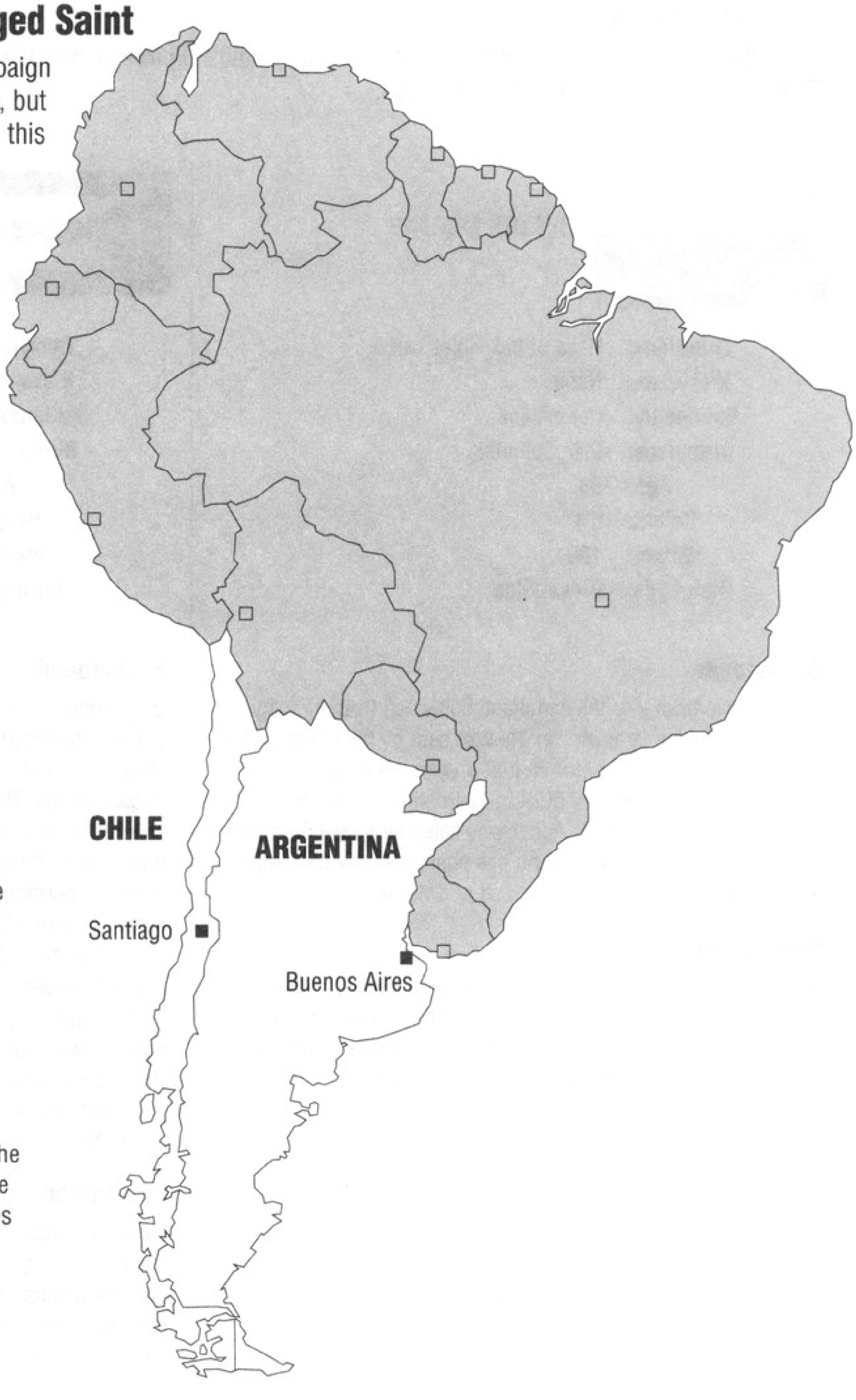
One cannot hope to understand Bautista without discussing his scarred childhood. As a young boy, Bautista and his friends were playing in an abandoned warehouse where chemical waste was illegally stored. The children accidentally ignited the waste which killed everyone except Bautista. But, he did not escape untouched. The unnatural heat and fumes scorched his skin severely, permanently removing the hair on his head and arms. Different looking from other children, Bautista found himself alone. Rather than let the tragedy overwhelm him, he instead focused on military-like discipline. He eventually found a home in Castro's communist brigade. The youngest member, Bautista was standing by Castro's side when they seized power in Havana. He rose quickly through the military, even serving a two-year assignment in South Africa. Bautista currently serves as the Minister of General Intelligence.

Description

Bautista's most striking feature is the lack of hair on his head and arms. He is always in exceptional physical and mental shape. Bautista is considered to be somewhat of a maverick in the Cuban military. A loner, he ignores the advise of others, preferring to do things on his own.

ARGENTINA — Operation Caged Saint

Operation Caged Saint is the second campaign in JetFighter III. It is set in South America, but focuses mostly on Chile and Argentina. In this campaign, you will be flying with the RDF against Argentina's invasion of Chile.



THE SITUATION

Argentina's military dictatorship has invaded Chile. Its Supreme Director, Juan San Martin, claims that this invasion is just the first step on his way to liberate all of South America from imperialism.

Unlike the Gulf War, the United States decided to let the UN solve this problem on its own. However, the United Nations has not done a very good job so far. Argentinean troops have already captured Chile's Santiago, control the Beagle Channel, and are attacking scattered resistance near the Atacama Desert. The UN fleet reached its destination a week ago, but it has seen only limited action.

Because of its lack of success, the United Nations has ordered in the RDF to help turn the tide. Your carrier is now in position off the coast and awaiting orders. There is little time left before San Martin consolidates his forces and digs in—permanently. If the RDF does not succeed quickly, it is unlikely that Chile will ever be liberated without a prolonged land engagement.

ROOTS OF THE CONFLICT

In 1810, Argentina became the first South American country to declare its independence from Spain. Then, just six years later, military leader Jose de San Martin left Argentina to liberate the rest of South America. He began by plotting the trans-Andean invasion of Chile. Using meticulous planning and unorthodox tactics, San Martin defeated the surprised Spaniards at Chacabuco and Maipu. Two days later, his force entered the Chilean capital of Santiago, wresting control of the nation from Fernando de Ascabal y Souza. In 1818, San Martin was offered the governorship of Chile by its provincial congress which he declined, allowing instead Bernardo O'Higgins to ascend to the post of "Supreme Director." San Martin then went on to liberate Peru from Spain before retiring.

Little happened in Argentina until 1950. But from 1950 until 1990 there were twenty-two changes of Argentinean government (most taking place through violent coups, extremist rebellions, guerrilla war, or outright assassination). At times, martial law was decreed and due process was abandoned. Argentina became notorious for its political oppression. Successive administrations were unable to prevent the decay and Argentina experienced even worse economic woes. Politics increasingly focused on competing sectional claims to national income and acute polarization between civil society and the armed forces. Over the years, internal conflicts drove the country into regional military confrontations, as well as a disastrous war over the Falkland Islands in 1982.

During the early 1990's, to entice investment, Argentina began to privatize by selling off its telephone companies, airlines, public utilities, and shipping rights to foreign conglomerates in an attempt to bring investment. These and other radical reforms caused new disruption and discord in Argentina. By 1993, the country's domestic problems had never been worse. As a result, the elections of 1996 focused heavily on these economic and political hardships. One candidate, Pedro Cheavez, promised a new era of Argentinean prominence. Many leaders in the military, including Falkland war hero Juan San Martin, backed Cheavez. After a close election against a Communist challenger, Pedro Cheavez was elected as the President of Argentina. However, Cheavez was not able to stop Argentina's decline overnight.

After a brief honeymoon, many leaders in government were critical of Cheavez's slow progress. In particular, San Martin (then the Assistant Secretary of Military Affairs) was an outspoken critic. Calling for more radical changes, San Martin demanded that weak-kneed politicians had no place in Argentina's government. Then, in 1997, Cheavez had enough of the insubordination and dismissed him. San Martin was humiliated and bitterly angry. He and Carlos Santos (then the Secretary of the Military Affairs) organized the assassination of Cheavez and the overthrow of his government.

After months of careful preparation, his plan was efficiently executed. President Cheavez and several members of his family and cabinet were found murdered along the side of a road. San Martin went to great pains to make the brutal assassination appear as if the radicals movement had done it. As the result, the country was shocked, calling for swift reprisals San Martin swiftly denounced the radicals and pledged vengeance. His loyalists staged a few half-hearted raids against a small radical base, claiming victory in the name of their fallen leader.

With public opinion and the military establishment fully behind him, San Martin was in complete control. He announced the dawn of a new era for Argentina and declared himself the new "Supreme Director." Immediately, his government instituted a series of economic and social programs to generate popular support and placate the working class. Wage increases, default on national debts, and price controls were implemented. Although the long term consequences would be disastrous, San Martin felt the measures were necessary to tighten his grip over the opposition party. In a carefully staged political maneuver, the widow of former President Cheavez was even invited to speak at his inauguration and smooth over anti-militarist sentiment.

Behind the scenes, San Martin's regime launched a vicious campaign against the opposition, killing anyone who stood in his way. As soon as he could, San Martin announced a ban on all political parties and activities. He claimed it was necessary to "help unite the Argentinean people," but his goals were clear. Systematic torture and beatings were widely employed to maintain his control. Corpses of political opponents were often found floating in the River Plate.

Finally, with the demolition of the guerrilla movement in Tucuman in November of 1995, the last vestiges of pro-democratic sentiment were swept into history. With Argentina firmly in his grasp, San Martin then turned his eyes toward the rest of South America. He became obsessed with the notion that he was the direct descendant of his idol, Jose de San Martin. He felt that it was his responsibility to wrest control of South America from the weak-kneed politicians who groveled to the UN and America. Like his alleged ancestor, he was consumed with a desire to "liberate South America from the imperialistic forces which surrounded it." He said it was his destiny.

CURRENT EVENTS

San Martin has been under intense pressure to make good on his promises of swift economic reform. As part of his plan, he instituted a vast program to build an industrial base. The increased work and manufactured goods did much to improve the nation's financial woes, but their effects were short-term. Because of global shortages of coal, iron and oil, Argentina's fragile economic recovery began to sink.

Desperate for relief, San Martin renewed negotiations with Chile over control of oil fields recently discovered under the Antarctic Graham Land Peninsula. (The ownership of this territory had been in dispute for many years.) San Martin felt that his new robotic drilling platforms would make oil extraction from the deposits feasible. And more importantly, he believed that this valuable resource could be the key to solving many of Argentina's domestic problems. However, the Chilean government was not about to give their claims away, so their negotiations stalled once again.

About the same time, the International Court awarded sovereign rights of the Beagle Channel in Tierra del Fuego to Chile. Ownership of this strategically important waterway has been in dispute since 1878 when Argentina renewed its claim to Patagonia and sent warships to expel the Chilean settlers. Though the Boundary Treaty of 1881 tried to resolve the conflict, its ambiguous demarcation lines nearly led to war in 1899, 1904, and 1984. Ignoring this history, Argentina had hoped that the International Court would resolve the conflict once and for all. However, San Martin had never believed that the International Court would rule against him. The result was bitter resentment by San Martin and Argentineans.

These recent international failures have begun to weaken San Martin's control. A few underground activists have began calling for a free election while the Communist radicals renewed their attacks on the western provinces. San Martin could sense that his tenure as Supreme Director was in danger. Without the steady infusion of raw materials and a rejuvenated image, Argentina and his government would collapse.

Desperate, San Martin seized upon the recent international events as a pretext to create a national emergency. His rhetoric became more aggressive, claiming that Chile was the obstacle to Argentina's prosperity. Effective propaganda had painted Chile as a provocative regional enemy who was responsible for every ill. In need of more loyalists, San Martin created an elite secret police which he called "Negro Muerte" after his old unit. San Martin used these thugs to silence opposition leaders and to brutalize pro-Chile supporters. They rounded up any political dissidents and took control of the leading newspapers.

By the end of the year, San Martin made his intentions toward Chile known. He pledged to reunite Chile and Argentina. Hoping the world would ignore a conflict between two relatively unimportant nations, Argentina began to organize for war. Its industrial machine was working overtime, trying to prepare for the clash which was to follow. Chile, on the other hand, foolishly misread San Martin's build-up of military might. The Chileans believed that San Martin was just posturing in an attempt to force a resolution over the Antarctic Graham Land Peninsula. They did not take San Martin at his word.

On July 28, San Martin's invasion force crossed the Argentine-Chilean border in three separate locations. The first attack came one mile east of the Atacama Desert. The second swept south of Santiago near San Carlos. The third attack invaded Tierra del Fuego near the Beagle Channel. Shocked by the speed and ferocity of Argentina's attack, the UN scrambled to respond. They quickly voted to send the Rapid Deployment Force into the region to begin operations. In addition, the UN agreed to fortify Chile's border with Peru in an attempt to close the door to Argentina aggression and secure a second operational front near the Uruguay River Basin.

INTELLIGENCE

After the Argentinean loss to Britain in the war over the Falkland Islands, many thought that the Argentinean armed forces would be second rate. This is not so. After San Martin's build-up, it possesses the largest air force in South America. Furthermore, Argentina has the sixth largest army and seventh largest navy in the world.

In contrast, very little is left of Chile's armed forces. Although once possessing a reasonably-sized army and navy, San Martin's surprise attacks destroyed entire divisions. United Nation's intelligence says that scattered rebel resistance is all that is left. In particular, there still are some loyal troops in the mountains to the north.

ARGENTINA
Buenos Aires

ARGENTINA:

Area:	1,100,000
Population Size:	33,00,000
Population Density:	31 people/mi2
Capital:	Buenos Aries
Ethnic Groups:	85% White, 15% metizo and others
Chief Language:	Spanish
Religion:	Catholic (90%)
Literacy:	94%
GDP:	$64,900,000,000
Per capita:	$2,300
Exports:	Grains, foods, vegetable oils, soybeans
Imports:	Machinery, iron, steel, manufactured goods

CHILE
Santiago

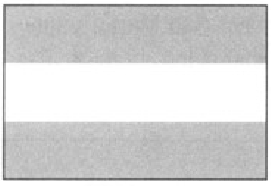
CHILE:

Area:	290,000
Population Size:	13,200,000
Population Density:	45 people/mi2
Capital:	Santiago
Ethnic Groups:	95% White and metizo, 5% Amerindian and others
Chief Language:	Spanish
Religion:	Catholic (89%)
Literacy:	91%
GDP:	$16,000,000,000
Per capita:	$1,400
Exports:	Copper, fruits, vegetables, minerals
Imports:	Machinery, manufactured goods, petroleum

RAPID DEPLOYMENT FORCE (CONT.)

KEY LEADER PROFILES

The following are highly confidential profiles of the key political figures involved in the this campaign. This information should not be distributed.



JUAN SAN MARTIN

Title/Rank: Supreme Director of Argentina
Nickname: The Liberator
Nationality: Argentinean
Birthplace: Mendoza, Argentina
Age: Born 3/5/56
Height: 5' 11"
Weight: 154 lbs.
Hair/Eyes: Black/Brown-Black

Background

Intelligence believes that San Martin intends to unite all of South America under his dictatorship. He claims that it's his destiny to "liberate the continent from the imperialistic influences which control and mold it." San Martin maintains that he is the direct descendent of Jose de San Martin and is responsible for protecting the Latin American people.

Juan San Martin was born on March 5, 1956 in Mendoza, Argentina. The only son of migrant farmers, San Martin spent his childhood working in the undying heat of run-down vineyards. Living in squalor with little to eat, San Martin and his family struggled to stay alive. Desperate to escape their oppressive poverty, he lied about his age and enlisted in the military at the age of thirteen.

San Martin grew quickly physically and mentally under the army's stern tutelage. He absorbed their military strategy and tactics, displaying abilities and skill that surprised his teachers. Within a few years, he had so impressed his supervisors that he was selected to attend officers' school in Buenos Aires. There his skills were honed and polished to perfection. After graduation, he was posted to an elite branch of Argentina's military known as the "Black Guard." After serving as an officer there for more than five years, he was promoted to captain and given control over a small, covert strike force. Under San Martin's rigid discipline and merciless tactics, this highly-trained unit became known as "Negro Muerte" (or "Black Death").

An untiring student of history, San Martin spent hours studying old battles and debating their battle plans. In particular, he was fascinated with his namesake, Jose de San Martin. After years of research, he even published a military book on Jose de San Martin's invasion of Chile and Peru. Although the book received little recognition, he continued his devoted study.

However, his research was interrupted by Argentina's impending invasion of the Falkland Island. Although he had followed the UN debate between Britain and Argentina for years, he stridently believed that the Falkland Islands belonged to Argentina. As the result, he was angry at Britain for refusing to relinquish control of the islands. And he was even angrier at the United Nations for allowing such imperialistic exploitation. Yet, San Martin hoped that America would ultimately convince Britain to give up the Falklands. But after negotiations stalled again, Argentina decided force was necessary. San Martin agreed and was only too happy to participate.

Having been the head of Argentina's covert military strike force, San Martin was perfect to help lead the invasion of the Falklands. He was chosen to be one of the officers who would lead the invasion to capture its capital, Port Stanley. After its capture, he was to take his men over land to Goose Green where he was to defend its airport from attack. San Martin immediately began preparing his men for the invasion. A strong believer in discipline and training, he worked his men tirelessly to prepare them for the difficult days to follow. In turn, they gave him their fierce respect and loyalty.

On April 2, 1982, San Martin and a force of about 2,500 men swarmed ashore, capturing Port Stanely. Backed by an aircraft carrier, three destroyers and other warships, the invasion force then moved inland. San Martin's unit moved swiftly.

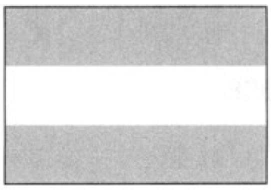
Within a matter of a few hours, he had secured the airport and began preparing for Britain's inevitable counterattack. His superiors, Air Commodore Pedrozo and Lieutenant Colonel Piaggi, were impressed with San Martin's instincts and ruthless efficiency. At the base, south of the Goose Green airstrip, San Martin had set up anti-aircraft guns and artillery. He had also cleverly concealed his heavy mortars and Pucara ground-attack aircraft.

The British counterattack finally came at 2 am on May 28 when about 400 paratroopers moved in. San Martin and his troops fought fiercely but the Argentinean unit was no match for the better-equipped British forces. After nearly twenty-six hours of grueling fighting, Air Commodore Pedrozo called for a cease-fire. San Martin refused to follow the order to cease-fire and continued his attacks during the night. Although he had pledged to die rather than surrender, he was finally captured after he had been knocked unconscious by the concussion from a GR3 Harrier's cluster bomb.

After the Battle for Goose Green ended, San Martin and his remaining men were returned to Argentina. Although he had disobeyed a direct order to cease-fire, San Martin was proclaimed a hero for his unyielding nerve against overwhelming odds. In appreciation for his efforts, he was promoted to Lieutenant Colonel (replacing Lieutenant Colonel Piaggi who had died in the attack). At twenty-six years old, San Martin decided he had enough of the military and went back to his boyhood home in Mendoza. Much had changed since he had left. San Martin had been tempered in the fire of battle and tutored in the art of war. He was no longer content to work in the dirt fields. Rather, he was possessed with a new ambition—what he called "the real war."

Description

Juan San Martin is a tall, well-built man with a stiff jaw and raven black hair. His stern face reflects an inner fire and spirit. Perhaps his most notable feature are his dark, sunken eyes. Although generally displaying a quiet reserve, San Martin is known to explode in rage when his plans go awry.



CARLOS SANTOS

Title/Rank:	Director of Military Affairs
Nickname:	The Crocodile
Nationality:	Argentinean
Birthplace:	Cordoba, Argentina
Age:	53
Height:	5' 8"
Weight:	178 lbs.
Hair/Eyes:	Brown/Brown

Background

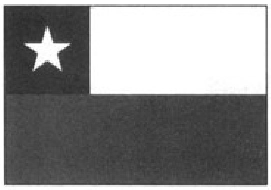
Like his father and grandfather, Santos has spent his entire life devoted to Argentina's military. After proving himself to be an extraordinary strategist, he was given command of the elite "Black Guard." At the same time, San Martin was sent to the "Black Guard" where he met and served under Santos. Brilliant leaders, the two men were nearly inseparable by the time San Martin was promoted to "Negro Muerte."

Santos served in the Falkland Islands, but didn't see any real action. He returned to Argentina after the surrender and like many, thought about leaving the service. But, his tenacious dedication wouldn't let him leave. After a few other positions, Santos was made Secretary of Military Affairs under President Cheavez. There he strongly urged the President to appoint San Martin as the Assistant Secretary.

After a few years, his enthusiasm for politicians like Cheavez began to wane. Santos and San Martin began to plan for the overthrow of the government. Then in 1997, Cheavez fired San Martin for his outspoken criticism of the government. Bitterly angry, they assassinated Cheavez, overthrew his government, and established San Martin as "Supreme Director." Santos serves as Director of Military Affairs.

Description

Santos is a short, powerful man who is built like a fireplug. Rarely showing emotion, his demeanor is cold and calculating. His most unusual characteristic is that he is missing a finger on his left hand.



ARTURO MACEDA

Title/Rank:	President of Chile
Nickname:	None
Nationality:	Chilean
Birthplace:	Concepcion, Chile
Age:	54
Height:	5'4"
Weight:	125
Hair/Eyes:	White/Brown

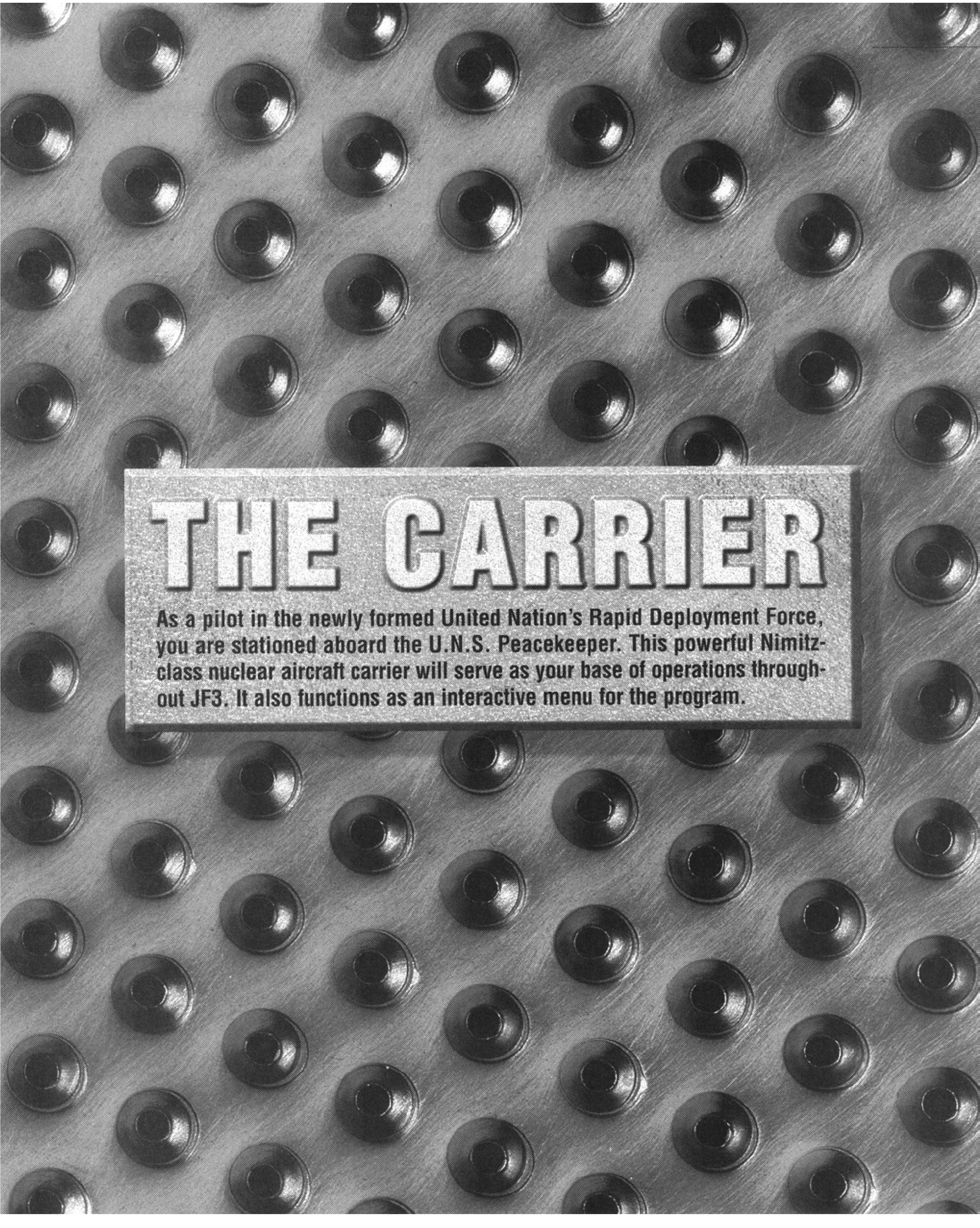
Background

Maceda was born into a burgeoning middle-class family. His father was the foreman of a successful fishing operation and soon branched out into a business of his own. Arturo spent his youth working the nets on his father's boats. For such dedication, Arturo's father sent his only son to the University in Rio de Janeiro, Brazil. Arturo studied law and eventually returned to his native Chile. He opened a practice in his hometown of Concepcion and eventually entered politics.

Arturo Maceda is a survivor. His political career has endured the turbulent times of Leftist Salvador Allende Gossens and the dictator Augusto Pinochet. After the upheaval of the first democratic elections in Chile, Maceda's presidency has been one of quiet efficiency. Maceda knows that this dreadful war has sent the Chilean economy reeling and has erased any social reform advances made in the past several years. He is currently in exile, running his government from a secret base in the Andes mountains.

Description

Maceda is short in stature with deep tan-leather skin. He is a plain looking man, neither attrative nor unattrative. He is bald with white hair on both sides of his head.



THE CARRIER

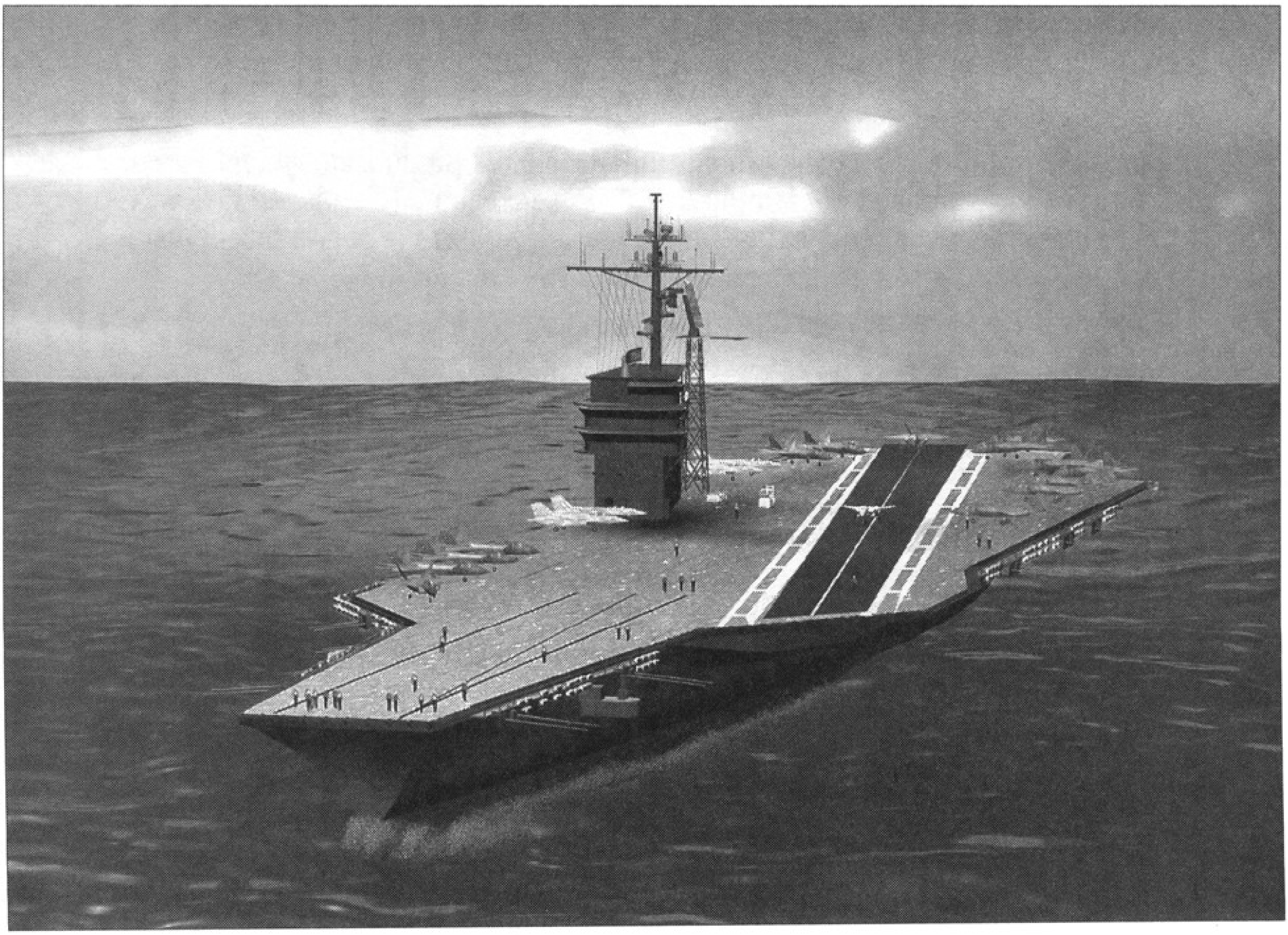
As a pilot in the newly formed United Nation's Rapid Deployment Force, you are stationed aboard the U.N.S. Peacekeeper. This powerful Nimitz-class nuclear aircraft carrier will serve as your base of operations throughout JF3. It also functions as an interactive menu for the program.

STATISTICS

The U.N.S. Peacekeeper is a state-of-the-art Nimitz class nuclear aircraft carrier. It has the latest in technology and weapons. However, its greatest strength lies in its enormous air power. The Peacekeeper can carry about 90 different aircraft and approximately 6,000 men. This formidable air wing usually includes the Lightning II, Tomcats, Hornets, Intruders, Prowlers, Hawkeyes, Vikings, and Sea Kings. It is also better organized than other carriers, carrying nearly 20% more aviation fuel, munitions and stores than the U.S.S. Enterprise.

NIMITZ CLASS CARRIER

Dimensions:	Overall length of 1,092 feet with a flight deck length of 752 feet
Displacement:	94,500 tons fully loaded
Propulsion:	Four-shaft geared steam turbines powered by 2 nuclear reactors delivering 280,000 shp
Speed:	Approximately 34 knots
Armament:	3 Sea Sparrow SAM launchers and 4 Vulcan-Phalanx CIWS (close in weapons system)

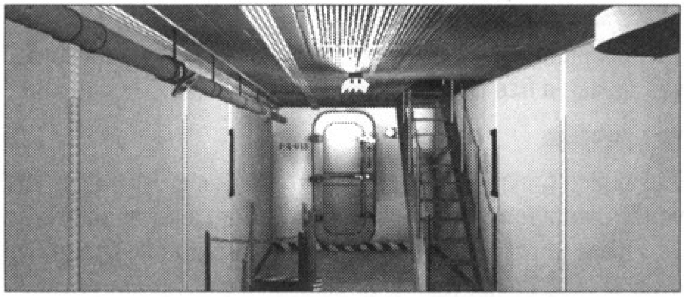


GETTING AROUND

The U.N.S. Peacekeeper is divided into three main levels or "decks." Each deck has many different rooms to explore. You can easily navigate around the carrier with just a few simple instructions.

EXPLORING

The carrier's 3D cinematic interface allows you to walk around and experience what it is like to live on a carrier. You can move around in the ship by using your mouse to "walk" in the right direction. For example, if you are standing in a hallway and want to walk into a room, just point your mouse cursor at the door and left mouse click.



When activated, the program plays an animation of you walking into that room. The animation usually stops when you are inside the room. To "see" what something is in a room, simply move the cursor over it. If that object is a hot spot, the object's name will appear at the bottom of the screen. If you want to investigate further, move your cursor over the item and left mouse click. This will then play an animation of you walking toward the object.

Most objects also can be accessed by pressing their corresponding hot key. For example, if you are standing inside the Cabin and you want to look at the Medals Case you can activate it by pressing the **[M]** key on the keyboard.

When you are finished exploring a room, press **[Spacebar]** or click at the bottom of the screen to exit. The program plays an animation of you leaving the room and returning to the hallway. Pressing the **[Spacebar]** or clicking at the bottom of the screen will also turn your view around once you are in the hallways.

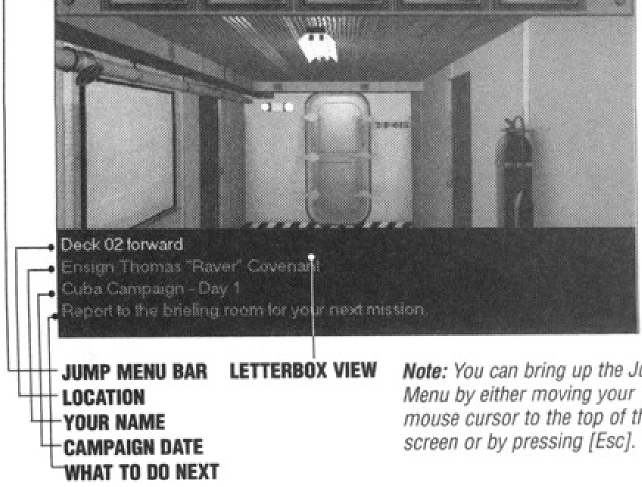
You can also avoid the animation by "jumping" directly to the room. This can be done with the Jump Menu. The Jump Menu is located in the blackened top third of every letterboxed (or cropped) screen. It is concealed from your view until activated. You can bring up the Jump Menu by either moving your mouse cursor to the top of the screen or by pressing **[Esc]**.

After you have enjoyed JetFighter III for awhile, you may wish to skip the transition animations. You can accomplish this by either interrupting the movie or by jumping directly into the room. To interrupt the movie, press any key or click the mouse. This skips the animation and takes you directly to the next screen.

Note: *Pressing any key skips the transition animation.*

JUMP MENU — [Esc]

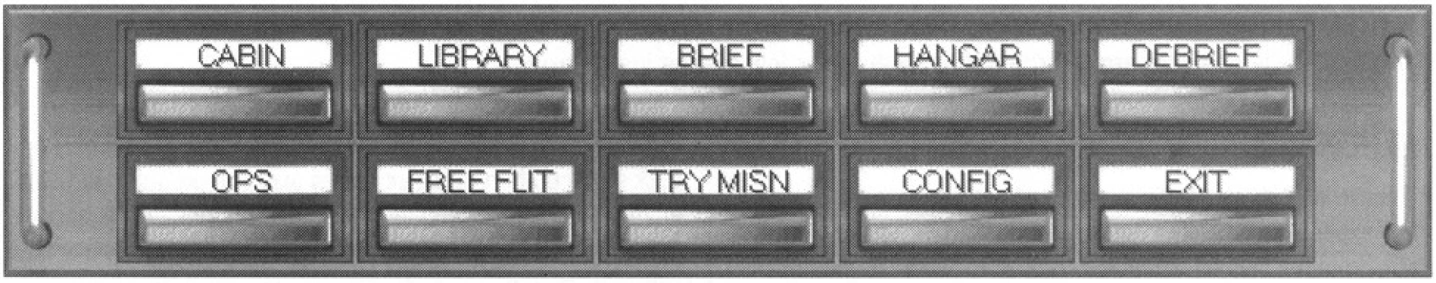
You can also avoid the animation by "jumping" directly to the room. This can be done with the Jump Menu. The Jump Menu is located in the blackened top third of every letterboxed (or cropped) screen. It is concealed from your view until activated. You can bring up the Jump Menu by either moving your mouse cursor to the top of the screen or by pressing **[Esc]**.



Deck 02 forward
Ensign Thomas "Raver" Covenant
Cuba Campaign - Day 1
Report to the briefing room for your next mission.

Note: *You can bring up the Jump Menu by either moving your mouse cursor to the top of the screen or by pressing [Esc].*

GETTING AROUND (CONT.)



Once you have activated the Jump Menu, you can choose from twelve different options. Each of the buttons moves you instantly to a room or menu. To use a Jump Button, left mouse click on it.

CABIN

This button moves you to the Cabin. This is where you can access the computer terminal and inspect your medals.

LIBRARY

This button takes you to the Library. This room contains the daily newspaper and an on-line military encyclopedia.

BRIEF

This button transports you to the Briefing Room. There you can receive your orders for the next mission.

HANGAR

This button moves you to the Hangar. This is where you can load your airplane and start your mission.

DEBRIEF

This button sends you to the Debriefing Room where you can review your performance.

OPS

This button takes you to Operations. This room is where you can access the Free Flight, Instant Mission, Campaign Information, Config and Roster Menus.

FREE FLT

This button brings up the Free Flight Menu. This menu allows you to start a free flight session.

TRY MISSION

This button brings up the Instant Mission Menu. This menu lets you to start a random mission instantly from a list of options. This menu is perfect for players who just want to fly interesting missions and do not want to go through the campaign storyline.

CONFIG

This button sends you to the Config Menu. This Menu allows you to configure the game to your system.

EXIT

This button exits the program. You are then sent back to DOS or WIN.

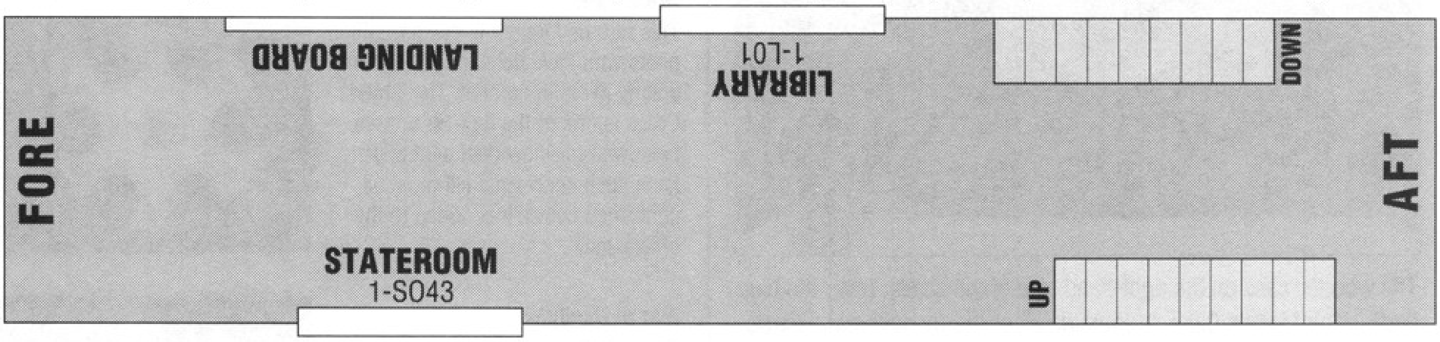
CARRIER LAYOUT

The U.N.S. Peacekeeper has several key areas you will want to explore. These are located on three decks: Deck 1, Deck 2, and Deck 3 (also called the Hangar).

The first deck houses the crew quarters, landing board and library. Deck 2 contains the briefing room, debriefing room, and kill board. The Hangar is where the aircraft are readied for missions.

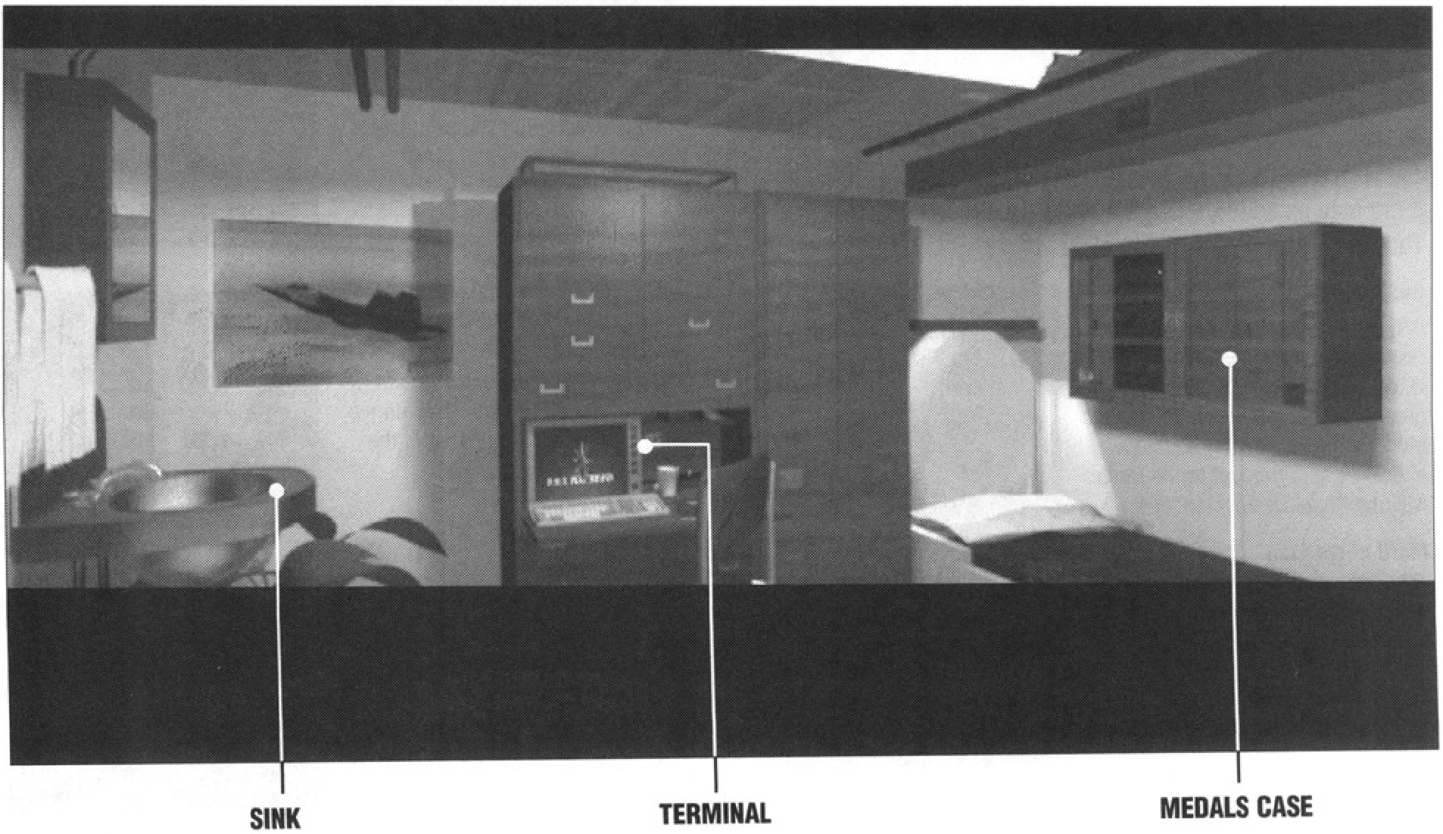
DECK 1

Deck 1 is where you will spend most of your non-duty hours. It holds your cabin, the ship's library, and the landing board.

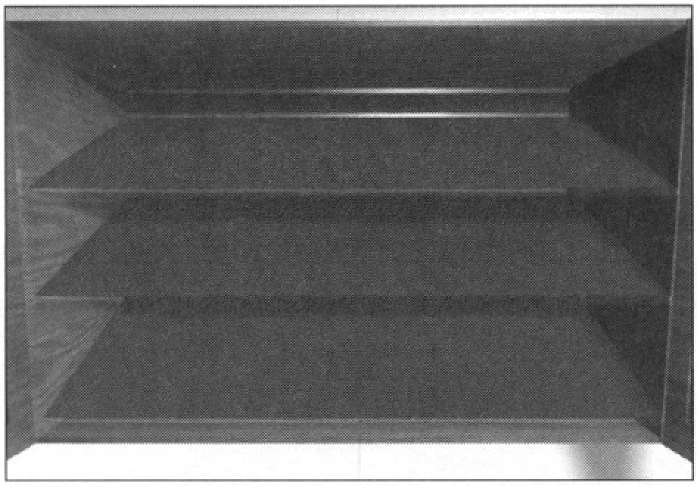


THE CABIN

The Cabin (also known as a "stateroom") is your home away from home on the U.N.S. Peacekeeper. It is where you store all of your gear, pictures from home, and other personal belongings. On the right wall is the medals case. It holds all of the awards that you have earned during JF3. Your personal computer is located in the center of the screen on the desk. It displays e-mail messages, your flight statistics, and other carrier information.



MEDALS CASE — [M]



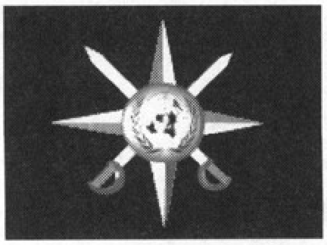
The wooden case on the right-hand side of the screen (over the blue bed) is the Medals Case. It contains all of the medals and awards that you have received during your career aboard the U.N.S. Peacekeeper. To access the case, move the mouse pointer over it and left mouse click. The case can also be activated by pressing **[M]**.

After selecting the Medals Case, the cabinet opens. Inside are all of the awards that you have earned. If you are a new pilot, the case only contains one medal. To see the name of the medal, move the cursor over the top of it. When you do this, the name of the award is then displayed at the bottom of the screen. It is the Benjamin Franklin Medal of Honor.

As a pilot in the United Nations' Rapid Deployment Force, you can earn medals through experience or proficiency. Although more may be added, there currently are ten possible awards. They are:

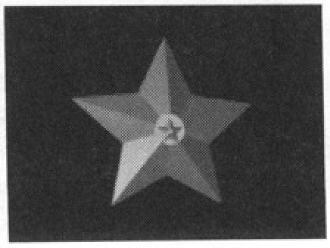
Benjamin Franklin Medal of Honor

Awarded to the select few who have been chosen to serve aboard the U.N.S. Peacekeeper. A decoration of great prestige, the Benjamin Franklin Medal of Honor is given to pilots after their appointment to the United Nations Rapid Deployment Force.



Merit of the Lion

This five-point medal is awarded to pilots after they have shot down their first enemy plane. The kill must be confirmed before the medal is bestowed.

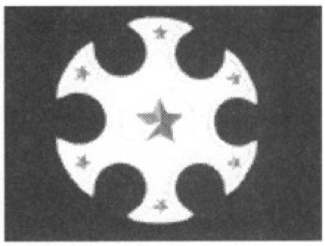


Ace Shield

This decoration is only given to gifted pilots who have personally defeated five enemy pilots in combat. Each such successful kill must be confirmed before it is added to the official tally.

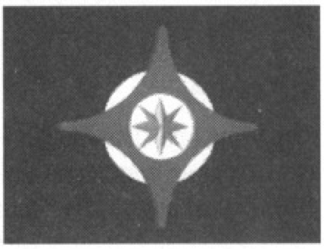
Grand Cross

This rare decoration is given to gifted pilots who have defeated over twenty enemy pilots in combat. The Grand Cross is one of the highest honors bestowed for individual pilot effort. Each such successful kill must be confirmed before it is added to the official tally.



Star of Daedulus

Rewarded for uncommon valor in the face of overwhelming odds, this medal is given to pilots who have been wounded in combat or narrowly escaped from death by ejecting.

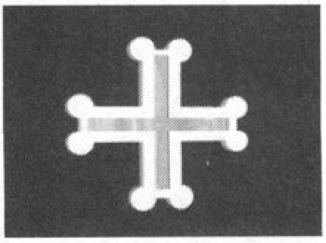


Combat Wings

These pins are given to pilots who have flown several hours of combat flight. There are three different levels: the Bronze Wing for 50 hours; the Silver Wing for 100 hours; and the Gold Wing for 200 hours.

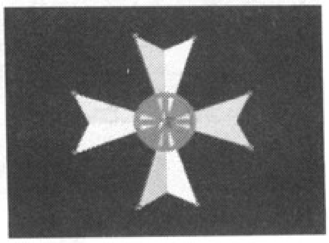
Charles DeGaulle Order of Nations

This medal is awarded to the men and women who have completed their first campaign of great import and magnitude. Recipients must have loyally carried out their duties and personally participated in the success of the campaign.

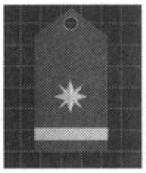


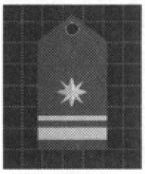
Theodore Roosevelt Order of Nations

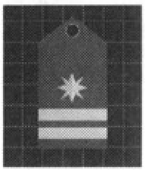
This medal is awarded to the men and women who have completed their second campaign of great import and magnitude. Recipients must have loyally carried out their duties and personally participated in the success of the campaign.

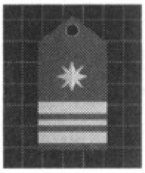


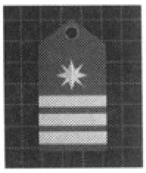
The medals case also displays your rank within the United Nations' Rapid Deployment Force. This is an honorary designation only. As you earn experience through the various campaigns by successfully completing missions, shooting down enemies, and bombing targets, you will be promoted to a higher grade. Your level will be represented by a Navy rank insignia here in the medals case. The ten possible ranks are:

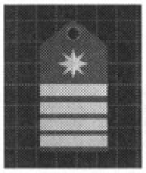

Ensign

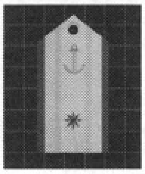

Jr. Lieutenant

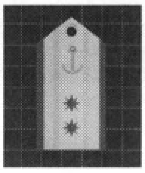

Lieutenant

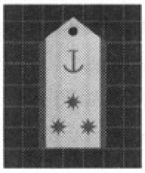

Lt. Commander

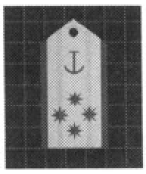

Commander


Captain


Lower Admiral

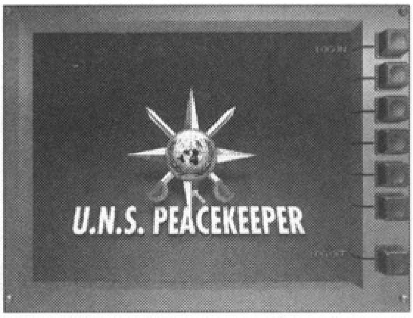

Rear Admiral


Vice Admiral

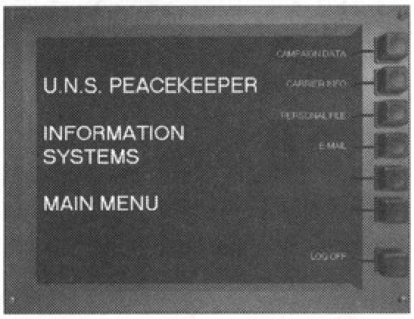

Admiral

COMPUTER TERMINAL — [C]

The computer terminal is your link to the ship and the outside world. It is where you can learn about the system's operations as well as get "letters" from home. The monitor can be seen in the middle of the screen (on the desk). To activate the computer, move the cursor over the monitor and left mouse click. It can also be activated by pressing **[C]**.



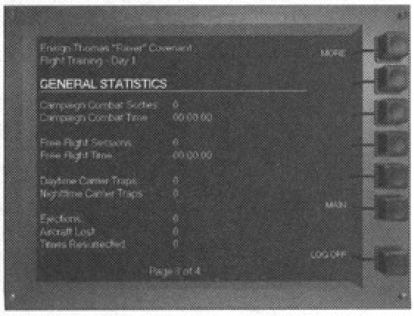
After selecting the computer, you sit down at the desk. The Rapid Deployment Force's logo is displayed on the face of the monitor. To begin, touch any key and log on. Simply press any key or click on the "Log On" button on the right-hand side of the screen. This boots up the computer and display the terminal's Main Menu screen.


U.N.S. PEACEKEEPER

INFORMATION SYSTEMS

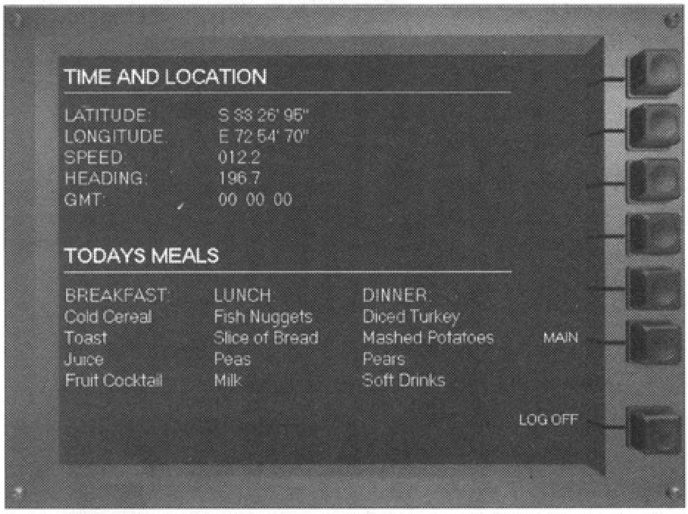
MAIN MENU

At the Main Menu, choose the subject matter you are interested in: Campaign Data; Carrier Info; Personal Info; or E-Mail. Pick the topic you want by clicking on the button next to the title.


```
Ensign Thomas "[illegible]" Covenant
Flight Training - Day 1

GENERAL STATISTICS
Campaign Combat Sorties    0
Campaign Combat Time       00:00:00

Free Flight Sessions       0
Free Flight Time           00:00:00

Daytime Carrier Traps      0
Nighttime Carrier Traps    0

Ejections                  0
Aircraft Lost              0
Times Resurrected          0

Page 1 of 4
```

Campaign Status — [D]

The first selection is Campaign Status. It contains general information about the current campaign that you are on. Click on this button to learn more about the campaign, number of missions flown, and other campaign specific data.



TIME AND LOCATION

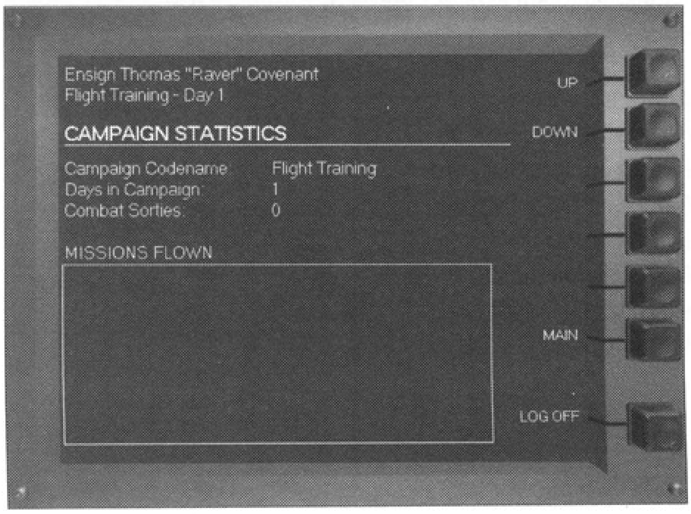
LATITUDE: S 33 26' 96"
LONGITUDE: E 72 54' 70"
SPEED: 012.2
HEADING: 196.7
GMT: 00 00 00

TODAYS MEALS

BREAKFAST:	LUNCH:	DINNER:
Cold Cereal	Fish Nuggets	Diced Turkey
Toast	Slice of Bread	Mashed Potatoes
Juice	Peas	Pears
Fruit Cocktail	Milk	Soft Drinks

Carrier Info

The next choice is Carrier Info. This topic gives you information on the aircraft carrier. Click on this choice if you want to know about the carrier's latitude, longitude, speed, heading, time and such.



Ensign Thomas "Raver" Covenant
Flight Training - Day 1

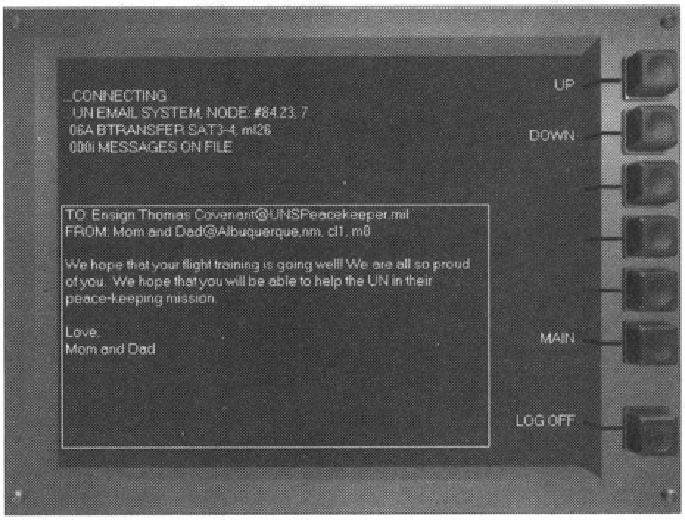
CAMPAIGN STATISTICS

Campaign Codename: Flight Training
Days in Campaign: 1
Combat Sorties: 0

MISSIONS FLOWN

Personal Info

Because of their life-and-death profession, pilots are very concerned about their performance. The Personal Information section has important statistics on your overall performance throughout the campaigns. Left mouse click on this button to find out your weapons' accuracy, hit ratios, rankings, traps, flight hours, combat hours, and other mission critical stats. Some of this information is contained on other pages within the Personal Info section. To access these other pages of data, just click on the "Next" or "Prev" page buttons on the right-hand side of the screen.



```
..CONNECTING
 UN EMAIL SYSTEM, NODE: #84.23. 7
06A BTRANSFER SAT3-4, ml26
000i MESSAGES ON FILE
```

TO: Ensign Thomas Covenant@UNSPeacekeeper.mil
FROM: Mom and Dad@Albuquerque.nm. cl1, m8

We hope that your flight training is going well! We are all so proud of you. We hope that you will be able to help the UN in their peace-keeping mission.

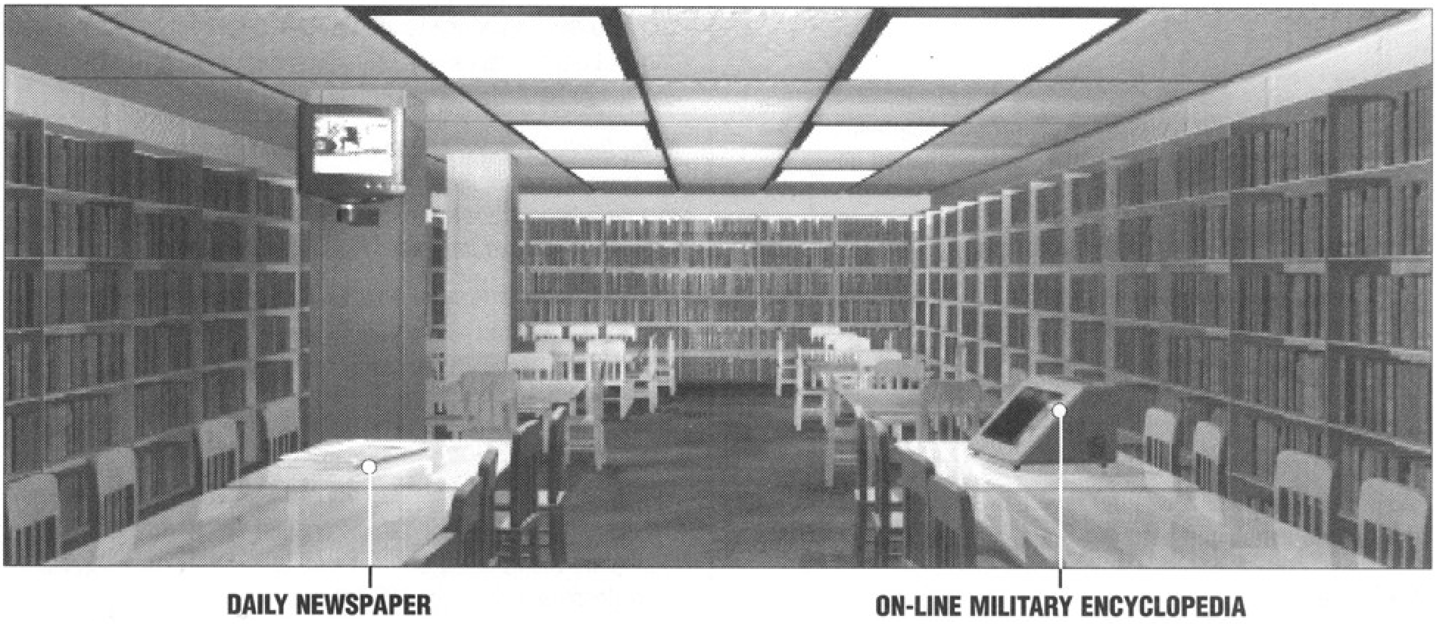
Love,
Mom and Dad

E-Mail

Probably the hardest part of being stationed on a carrier is the loneliness that you may feel being separated from your family. The U.N.S. Peacekeeper has tried to make the long trips easier by allowed crew members to speak with their friends and family through electronic messages or "e-mail." Click on this button to see if you have received any new e-mail. You will get new messages throughout your tour of duty.

LIBRARY

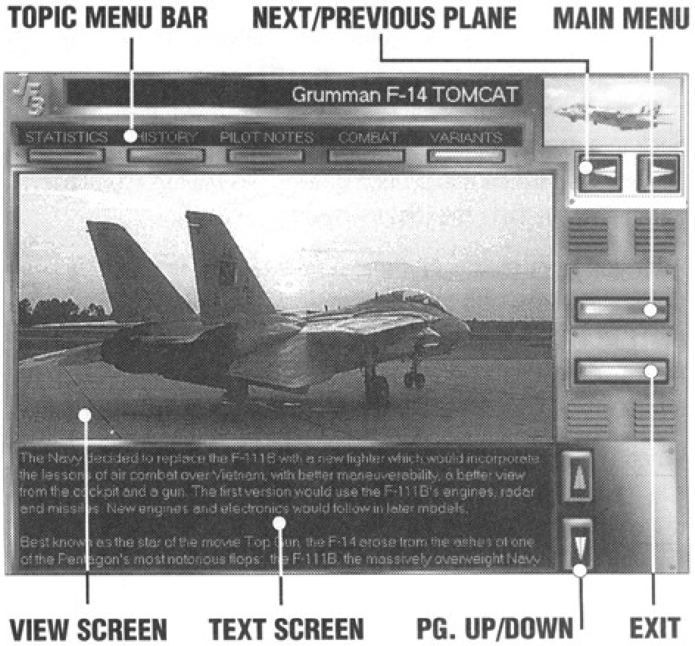
The library is a frequent stop for serious pilots. There you can read up on the latest news, check out the new enemy fighters, and review the stats on various armaments.


DAILY NEWSPAPER
ON-LINE MILITARY ENCYCLOPEDIA

MILITARY ENCYCLOPEDIA

The Military Computer is a comprehensive on-line encyclopedia of information and specifications. It is the definitive source of technical statistics that you may need during a mission. This on-line database has over 500 photographs of 60 modern aircraft and armaments, including expert commentary. You can access this database by clicking on the computer on the right-hand side of the Library.

After choosing a section, the computer displays the first entry. Its full color photographs and three-view drawings are shown in the center area. The plane's statistics and data are shown at the bottom of the screen in green text. This discussion is divided into five sections: **Statistics, History, Pilot Notes, Combat and Variants**.


TOPIC MENU BAR
NEXT/PREVIOUS PLANE
MAIN MENU
Grumman F-14 TOMCAT
STATISTICS
HISTORY
PILOT NOTES
COMBAT
VARIANTS
VIEW SCREEN
TEXT SCREEN
PG. UP/DOWN
EXIT

The Navy decided to replace the F-111B with a new fighter which would incorporate the lessons of air combat over Vietnam, with better maneuverability, a better view from the cockpit and a gun. The first version would use the F-111B's engines, radar and missiles. New engines and electronics would follow in later models.

Best known as the star of the movie Top Gun, the F-14 arose from the ashes of one of the Pentagon's most notorious flops: the F-111B, the massively overweight Navy

CARRIER LAYOUT (CONT.)

Statistics

Statistics explains the basic information on the selected aircraft, including size, weight, speed, range and such. This information is especially important in forming a general opinion on the different planes.

History

History has a description of the airplane's development. This section usually includes information on the different designs, prototypes, and manufacturers.

Pilot Notes

Pilot Notes contains insider tips and quirks on handling, landings, weaknesses and strengths of each plane. This section provides invaluable hints on how to attack different enemy planes.

Combat

Combat discusses the combat experience of the selection, considering its kill ratios and other records. This section offers insight into the abilities, strategies and success of the planes.

Variants

Variants explains the many changes made to the aircraft, often outfitting them for different countries and purposes.

The passage on the **F-18** begins with Statistics. To read through this section, click on the down button ▼ in the screen's lower right-hand corner or press **[Cursor Down]**. If you want to go back to a previous page, click on the up button ▲ or press **[Cursor Up]**. When this section is over, the Military Computer automatically starts the History passage and so on.

After you have read everything on the **[F-18]**, the Military Computer starts with the next fighter. If you want to jump to the next plane, click on the right button ▶ in the screen's upper right-hand corner or press **[Cursor Right]**. If you want to go to a prior page, click on the left button ◀ or press **[Cursor Left]**.

When you are finished, you can go back to the Main Menu or exit the computer. By clicking on the Exit button, you are then returned to the Library.

NEWSPAPER

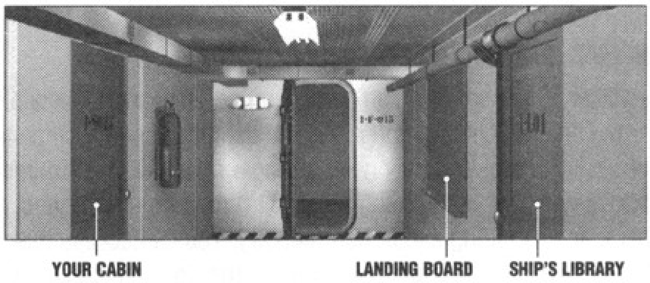
Reading the newspaper is a good way to keep abreast of current world events during a campaign. The articles keep you informed on how much the public knows of about your efforts. You also have a chance to sift through the enemy's disinformation and get the real story. The newspaper is also an effective way to get hints on the next mission or hotspot.

Note: *Because space on the carrier is limited, back issues of the newspaper are not kept! If you miss a paper, you won't have another chance to read it. To make sure that you don't miss an edition, try to read the paper before every mission.*

The newspaper is located on a desk near the left-hand side of the Library. To start reading the paper, left mouse click on it. You then walk over to the paper and open it up. When you are finished reading, press **[Esc]**.

LANDING BOARD

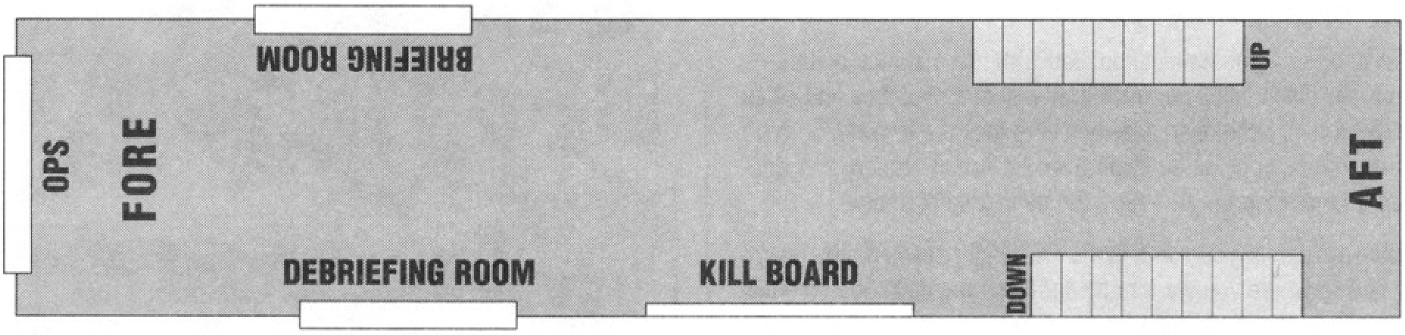
Each time you compete a trap aboard the U.N.S. Peacekeeper, your landing is rated and ranked against the other pilots. The results are then posted on the Landing Board, a green chalkboard located next to the Library.



To review your rating, click on the Landing Board. You then walk towards the wall. The board has three columns: the pilot's name, the rating given to the last landing, and the overall rating. The scores can range from "poor" to "excellent." Getting an excellent rating is a matter of pride among RDF pilots.

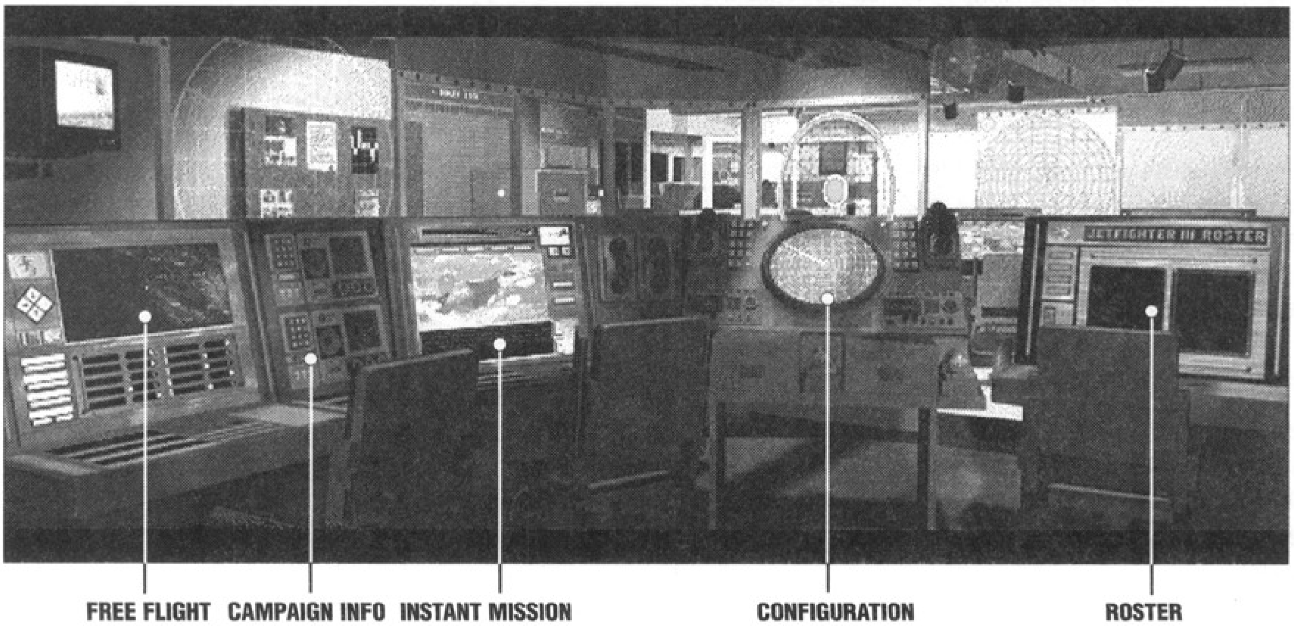
DECK 2

Deck 2 is where you are going to spend most of your working hours. It contains operations, the briefing room, debriefing room, and the kill board.


BRIEFING ROOM
UP
OPS
FORE
AFT
DEBRIEFING ROOM
KILL BOARD
DOWN

OPERATIONS

The carrier's command and control center is located in Operations or "Ops." This is where all flight operations are planned and monitored. The room is crowded with sophisticated equipment. In particular, there are five primary stations with which you should become familiar. They are Free Flight, Campaign Info, Instant Mission, Configuration, and Roster.


JETFIGHTER III ROSTER
FREE FLIGHT
CAMPAIGN INFO
INSTANT MISSION
CONFIGURATION
ROSTER

The Free Flight menu is the station located on the far left-hand side of the screen beneath the television monitor. It can be identified by its green and blue map of the world. To the right is the Campaign Info menu. The Instant Mission menu is in the middle of the screen, just to the left of the two telephones. It looks similar to the Free Flight menu, but has more text and fewer buttons. The fourth station is the Configuration menu. It also is in the center of the screen, except that it is just to the right of the telephones. The last station is the Roster menu. It is on the far right-hand side of the screen and can be recognized because of the colorful photograph on its display.

To start any of these stations, move your cursor over them and left mouse click. An animation will then show you walking up over to the menu.

FREE FLIGHT

The Free Flight menu allows you to practice your flying without any enemies. This feature is especially useful for beginners who want to improve their piloting skills.

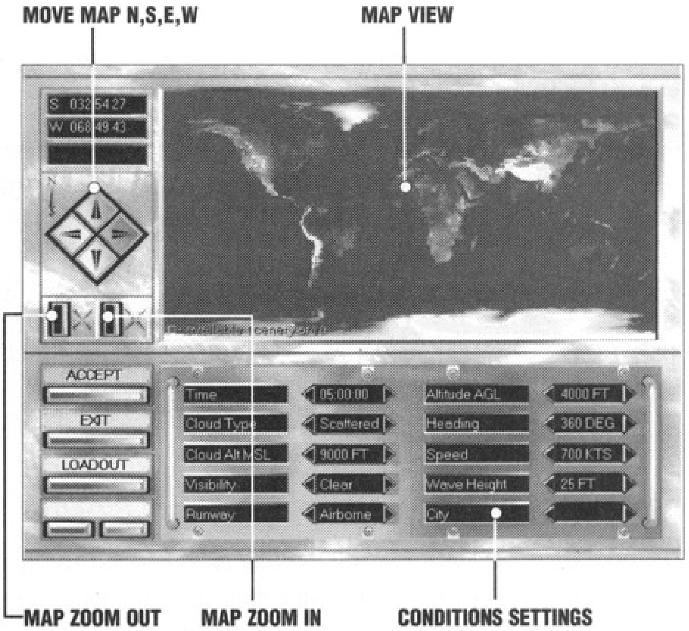
Unlike other flight simulations, JetFighter III contains real terrain. The cities, hills, mountains, rivers, and shoreline and cities in JF3 are all positioned exactly where they are in real life. In other words, you will be flying over the actual scenery and not some terrain a programmer made up in his spare time.

However, before you can begin a Free Flight session, you need to decide where you want to fly and what the day should be like. The map in the upper right-hand corner shows you what scenery is available by the red highlighted squares. You can change your view by clicking on the directional arrows with the mouse or by pressing the cursor keys. You can also scroll your view by holding down the button. Once you have found an area that looks interesting, move your cursor over it and left mouse click. If you have chosen a valid starting point, the area should be centered in the viewer.

Note: *The scenery's latitude and longitude are displayed in the upper left-hand corner of the map.*

Next, zoom in to where you want to start flying. You can do this by clicking on the zoom-in button. If you zoomed in too far, you can zoom out by clicking on the zoom-out button. By using the directional keys and zoom keys, you should be able to find some interesting scenery. When you are done, make sure that the center of the map (or the "+" marker) is where you want to begin the Free Flight session.

You have now chosen "where" you want to fly. The next thing you need to do is decide what the conditions should be. If you don't care about the conditions, you can accept the default setting by clicking on the "Accept" button. This will put you in the air right away.



S 032 54 27
W 068 49 43

Time	05:00:00	Altitude AGL	4000 FT
Cloud Type	Scattered	Heading	360 DEG
Cloud Alt MSL	9000 FT	Speed	700 KTS
Visibility	Clear	Wave Height	25 FT
Runway	Airborne	City	

However, it is very easy to change the defaults. There are ten different settings that you can adjust. You can change them in several different ways.

The best way to change the settings is to use the adjustment pointers next to each setting. Unlike the two previous options, this method can incrementally increase or decrease the setting. For example, move your cursor over the right pointer next to the Time setting and left mouse click.

The second way to change the settings is to use their "hot keys." Each setting has a letter which serves as its activator. (The exact keys are discussed below). Just like the mouse, you can cycle through the preset values by pressing the key. For example, to change the time press **[T]**. When you do this, the Time setting will change from "12:00" to "17:00" (or 5 p.m. in civilian time).

Time — [T]

This setting allows you to change the time of day or night when the Free Flight session begins. By clicking on "Time," you can cycle through its preset values of "12:00" (noon), "17:00" (5 p.m.), "22:00" (10 p.m.), "1:00" (1 a.m.), and "6:00" or (6 a.m.).

Cloud Type — [Y]

This setting allows you to change the type of cloud that will be in the sky when the Free Flight session begins. By clicking on "Cloud Type," you can pick from Smooth, Basic or Off. Note that the pointers only cycle through the options and do not let you incrementally adjust the cloud types.

Cloud Alt — [U]

This setting allows you to change the altitude of the clouds when the Free Flight session begins. By clicking on "Cloud Alt," you can cycle through its preset values of 1,000 feet, 4,000 feet, 10,000 feet, 20,000 feet or 30,000 feet.

Haze — [Z]

This setting allows you to change the amount of haze that will be in the sky when the Free Flight session begins. By clicking on "Haze," you can pick Foggy, Hazy or Clear. Note that the pointers only cycle through the options and do not let you incrementally adjust the haze setting.

Runway — [R]

Select Airborne if you wish to start off in the air. You can also cycle through all the airports that exist in the available scenery area. To return to airborne, simply mouse click in the map window.

Altitude — [A]

This setting allows you to change the altitude of your plane when the Free Flight session begins. By clicking on "Altitude," you can cycle through its preset values of 1,000 feet, 4,000 feet, 10,000 feet, 20,000 feet or 30,000 feet. We recommend that you start the plane at least 10,000 feet to be safe. If you start lower than that, you run the risk that your plane will crash into a mountain side even before you begin!

Heading — [H]

This setting allows you to change the heading of your plane when the Free Flight session begins. Although most people think of directions like a compass (i.e., North), aircraft headings are measured in degrees. For example, a plane flying due North has a heading of 0 degrees while a plane heading due West has a heading of 270 degrees. By clicking on "Heading," you can cycle through its preset values of 0, 45, 90, 135, 180, 125, 270, or 315 degrees.

Speed — [S]

This setting allows you to change the speed of your plane when the Free Flight session begins. By clicking on "Speed," you can cycle through its preset values of 300, 400, 500, 600, or 700 knots.

Wave Height — [W]

This setting allows you to change the height of the oceans waves when the Free Flight session begins. The height of the waves is important if you are going to try a carrier landing — the higher the waves, the more difficult the landing. By clicking on "Waves," you can cycle through its preset values of 0, 5, 10, 15, 20, or 25 feet.

City

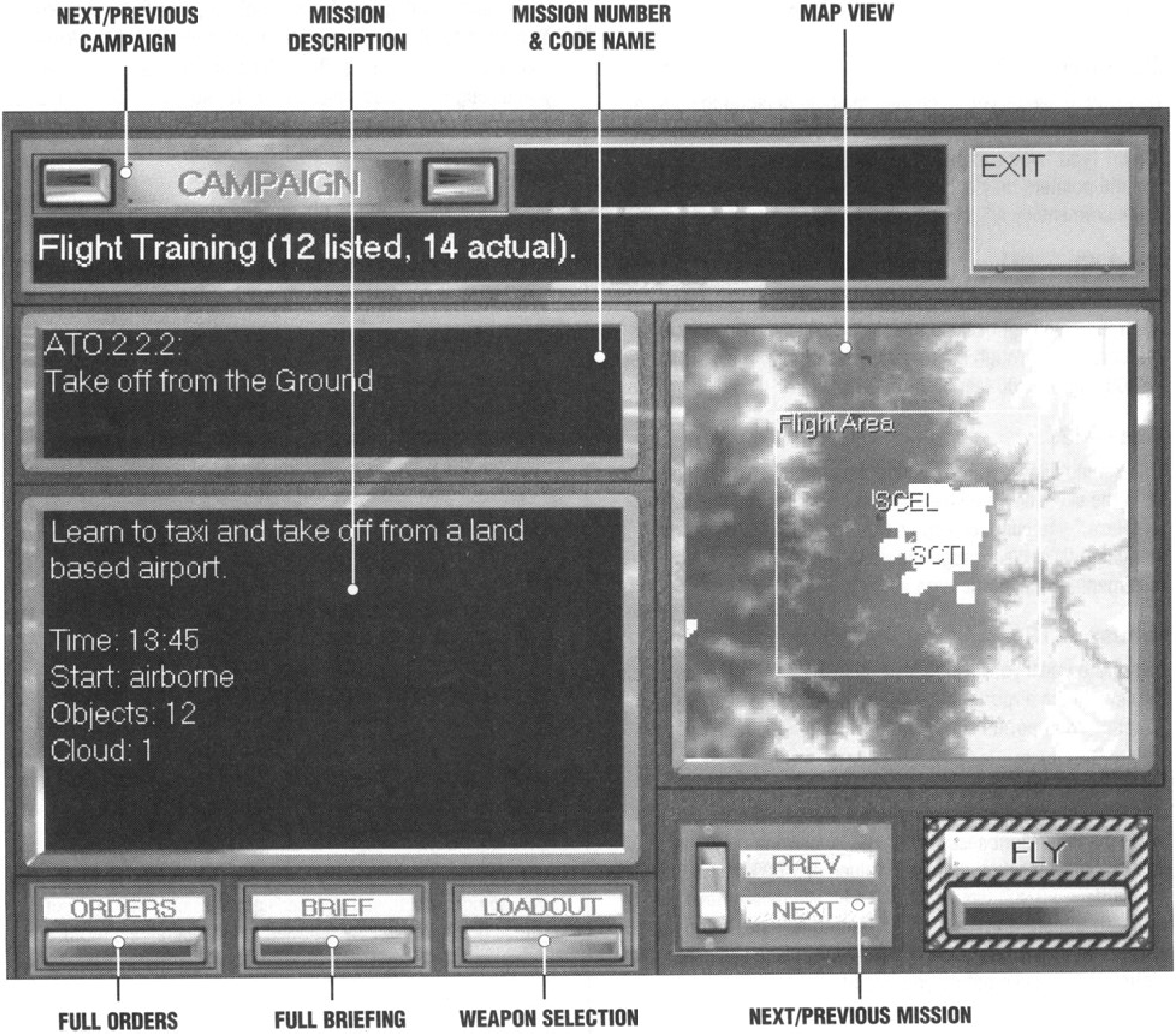
This setting allows you to cycle through all the major urban areas that exist in the available scenery area.

After you have made your changes to the settings, you are almost ready to start the Free Flight session. If you want, you can load your plane for combat (even though there won't be any enemies out there). This option is handy if you want to get in a little target practice. If you want weapons, click on the "Loadout" button or press **[L]**.

When you are ready, you can press the "Fly" button or press **[F]**. If you do not want to start a Free Flight session, click on "Exit" or press **[Esc]**. You will be returned to the Operations room.

INSTANT MISSION — [M]

Instant Mission allows you to select a particular mission without going through the campaign storyline. This menu is useful if you want to practice a mission since the results are not saved as part of your pilot's permanent log.


NEXT/PREVIOUS CAMPAIGN
MISSION DESCRIPTION
MISSION NUMBER & CODE NAME
MAP VIEW
CAMPAIGN
EXIT
Flight Area
SCEL
SCTI
ORDERS
BRIEF
LOADOUT
PREV
NEXT
FLY
FULL ORDERS
FULL BRIEFING
WEAPON SELECTION
NEXT/PREVIOUS MISSION

Flight Training (12 listed, 14 actual).

ATO.2.2.2:
Take off from the Ground

Learn to taxi and take off from a land based airport.

Time: 13:45
Start: airborne
Objects: 12
Cloud: 1

The Instant Mission screen has four main areas. The top box contains the name of the current selected campaign. A "campaign" is a set or scenario of missions. To change to a different campaign, use your cursor to click on the forward or backward button. Five different campaigns come with JF3:

Instant Flight Missions

Instant Fight Missions

Flight Training Missions

Cuban Drug Interdiction

Argentina-Chile War

As an example, cycle through the campaigns until you find the Argentina-Chile War. You now need to select a mission. Each campaign has different missions. The name of the mission is displayed in the box just beneath the campaign name. If you selected the Argentinean campaign, the words "Tunnel Vision" will be the first mission shown. To look at the second mission, click on the "Next" rocker switch in the lower right-hand corner or press **[Pg Dwn]**. The mission is called "Dead Silence." If you accidentally went past the second mission, click on "Prev" or press **[Pg Up]**.

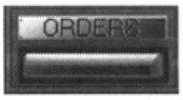
Note: *The code above the mission's title is its "Air Tasking Order" number. The Squadron Commander assigns each mission its own A.T.O. number.*

The third box contains a description of the mission. This is generally a one sentence summary of the mission's objective. In the case of "Dead Silence," the description says that the goal is to destroy the communications center at San Juan. The description also gives some basic information about the mission such as its launch time, starting point and such.

The forth box contains a map on the right-hand side of the screen. It depicts the mission zone, including the U.N.S. Peacekeeper and your waypoints. The map is a useful way to get a quick overview of the mission without having to go through a full briefing.

There also are several buttons on the screen.
These include: Orders, Brief, Loadout, Prev/Next, Exit and Fly. Their functions and shortcuts are discusses here.

Orders — [O]

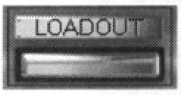


The Orders button will call up a copy of the written orders for this Instant Mission. This is the same briefing booklet that could be found in the Briefing Room before a mission. You can also press **[O]** to bring up the booklet.

Brief — [B]

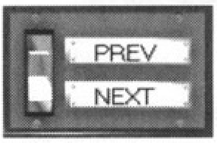
The Brief button will call up the animated mission briefing for this Instant Mission. This is the same briefing that could be heard in the Briefing Room before a mission. You can also press **[B]** to start the briefing.

Loadout — [L]



In Instant Mission, your aircraft is automatically loaded with the weapons package that the crew thinks is the best for the mission. However you can override the default and pick a different package. To do so, left mouse click on the "Loadout" button or press **[L]**. This calls up the Weapons Loading screen and make your selections.

Prev/Next — [Pg Up/Pg Dwn]



The Prev/Next rocker switch allows you to cycle through the available missions in each campaign. Click on the bottom half of the switch to see the "Next" mission or the top half to see a "Previous" mission. You can also press **[Pg Up]** and **[Pg Dwn]** on the keyboard to accomplish the same thing.

Fly — [Enter]

After you have found the perfect a campaign and mission, you need to accept it before the mission will begin. To accept a mission, click on the Accept button or press **[Enter]**.

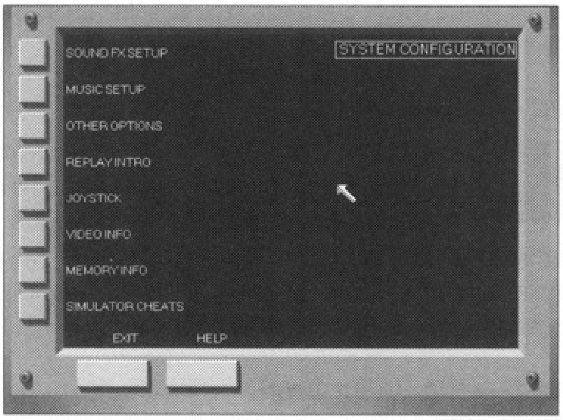
CONFIGURATION — [C]

Other Options: This allows you to set other Carrier features such as animated walk-around.

Replay Intro: This will replay the opening animation.

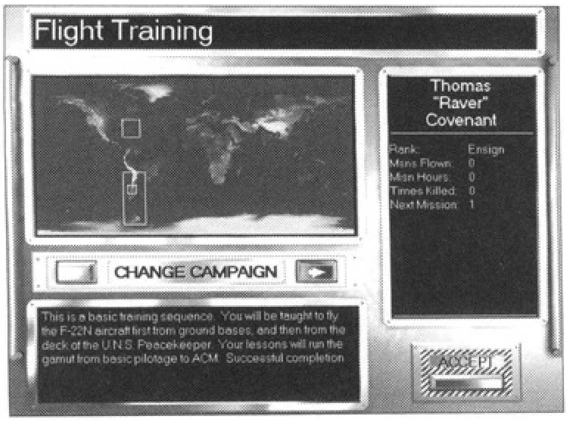
Video Info: This will give you information on the brand of graphics card your computer has including the amount of graphics memory and supported video modes.

Simulator Cheats: Allows you to set cheat options before entering the Carrier. This is explained in detail in the Reference chapter under the Inflight Menu Section.


SYSTEM CONFIGURATION
SOUND FX SETUP
MUSIC SETUP
OTHER OPTIONS
REPLAY INTRO
JOYSTICK
VIDEO INFO
MEMORY INFO
SIMULATOR CHEATS
EXIT
HELP

CAMPAIGN INFO

This screen displays the current campaign that your current selected pilot is in. The map displays the campaigns available with green boxes outlining their conflict areas. The pilot name, rank and statistics are shown on the right side. The campaign summary is displayed in the text window. *Warning: Selecting a new campaign will erase the current campaign statistics.*


Flight Training
CHANGE CAMPAIGN
ACCEPT

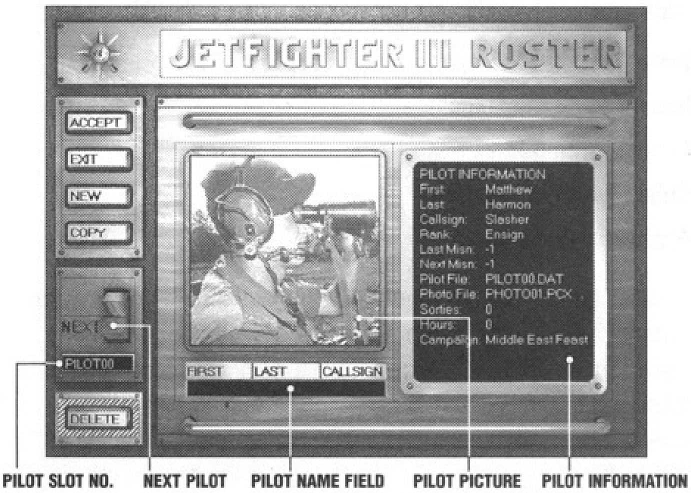
Thomas
"Raver"
Covenant

Rank: Ensign
Msns Flown: 0
Msn Hours: 0
Times Killed: 0
Next Mission: 1

This is a basic training sequence. You will be taught to fly the F-22N aircraft first from ground bases, and then from the deck of the U.N.S. Peacekeeper. Your lessons will run the gamut from basic pilotage to ACM. Successful completion

ROSTER — [R]

The Roster menu allows you to save your progress in the game. It also lets you create alter-egos for the simulation.


JETFIGHTER III ROSTER
ACCEPT
EXIT
NEW
COPY
NEXT
PILOT00
DELETE
FIRST
LAST
CALLSIGN
PILOT SLOT NO.
NEXT PILOT
PILOT NAME FIELD
PILOT PICTURE
PILOT INFORMATION

PILOT INFORMATION
First: Matthew
Last: Harmon
Callsign: Slasher
Rank: Ensign
Last Misn: -1
Next Misn: -1
Pilot File: PILOT00.DAT
Photo File: PHOTO01.PCX
Sorties: 0
Hours: 0
Campaign: Middle East Feast

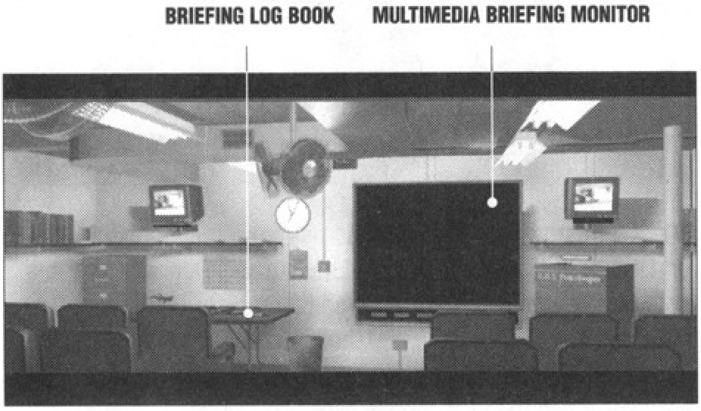
Before you can start a mission, you need to create a pilot to represent you during the campaigns. The Roster Menu lets you do this. Create a new pilot by clicking on the New button. The new pilot has a default name, call-sign and picture. To change the pilot's information, left mouse click on the First button and type in the pilot's first name. When you are finished, press **[Enter]**. Continue this process with Last and Callsign. To change the pilot's picture, click on the photograph.

If you made a mistake, you can delete the pilot by clicking on "Delete" or pressing **[Del]**. When you are finished, click on the Accept button or press **[Enter]**.

Occasionally you may want to try something risky or unusual and you don't want it on your permanent record. The easiest way is to create a different pilot to try it out. Instead of choosing "New" (which will start the pilot at the first mission), click on "Copy". This will copy your current pilot's information into a new file. To make sure the pilot was created, use the Prev/Next rocker switch to flip through the current list. Simply click on the Pilot Name Field to change the names without altering the history. If the new pilot was made, you can then try out your idea without worrying about the "saved" pilot.

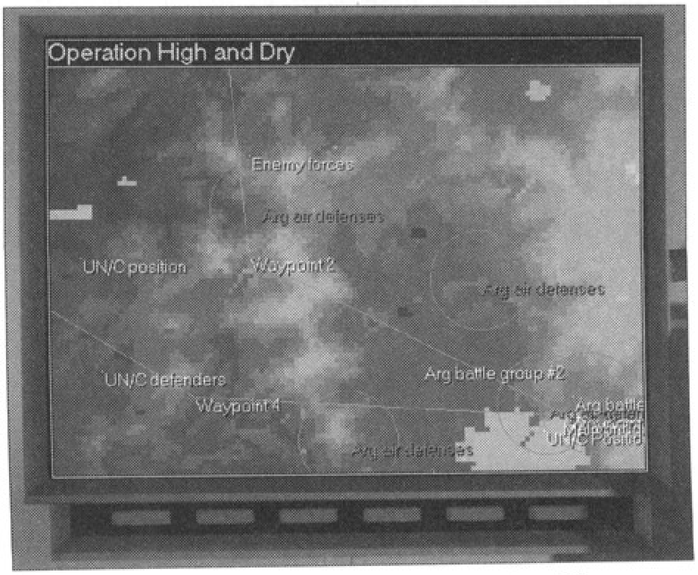
BRIEFING ROOM

This is where you receive detailed information on your next mission from your squadron commander. The briefing are critical for success since they tell you about the mission's waypoints, targets, and estimated enemy resistance.


BRIEFING LOG BOOK
MULTIMEDIA BRIEFING MONITOR

BRIEFING MONITOR — [M]

To begin the briefing, click on the large monitor located on the back wall of the briefing room or press **[M]**. An animation then plays of you sitting down and the lights dimming. At your command, the monitor graphically animates the mission, showing its waypoints, targets, and enemy positions.


Operation High and Dry
Enemy forces
Arg air defenses
UN/C position
Waypoint 2
Arg air defenses
Arg battle group #2
UN/C defenders
Waypoint 4
Arg air defenses
Arg battle
UN/C Positio

Mission orders are displayed on the large monitor. When you are finished, click on the Exit button or press **[Esc]** to return to the Briefing Room.

Summary

The Summary explains the overall mission situation. It contains general information on the type of mission (i.e., CAP. CAS, SAR, etc.), enemies, objectives, and wing designations. Because it is an overview, new pilots may find that it is the most important part of the briefing.

Targets

The Targets section goes into more detail on the objectives of the mission. This section may be very short (i.e., "Attack any enemy aircraft in the region") or very detailed (i.e., a listing of all valid military targets and objectives).

Threats

Threats or "hostiles" includes information on anticipated enemy resistance. This subject reports any threats in on the area, last known enemy positions, and expected response. Although the information may be inaccurate, there often are several important tips included in this section.

Friends

This section provides insight into other military operations going on in the same area. Friends includes information on the expected position of support aircraft, bombers, AWACS, ground forces and such. This data is useful in planning your attack and avoiding friendly casualties.

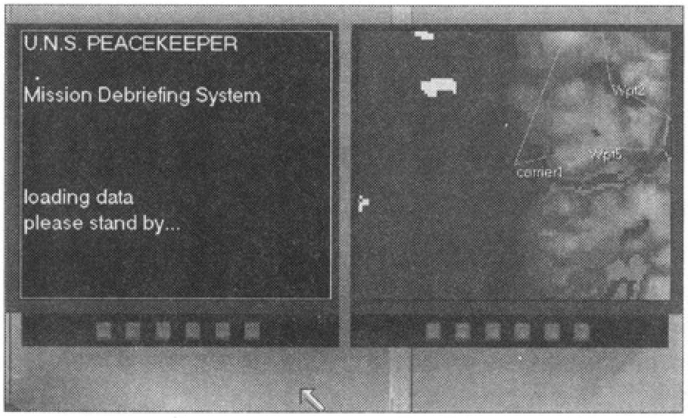
Exit

When you are finished with the briefing, press the Exit button to be returned to the Briefing Room.

BRIEFING BOOKS — [B]

After playing JetFighter III for awhile, you may want to skip the animated briefing. The briefing books are available for players who just "want the facts." The books contain the same briefing information that is displayed in the animation. To read a briefing book, move your cursor over the table in the briefing room and left mouse click.

DEBRIEFING ROOM



U.N.S. PEACEKEEPER

Mission Debriefing System

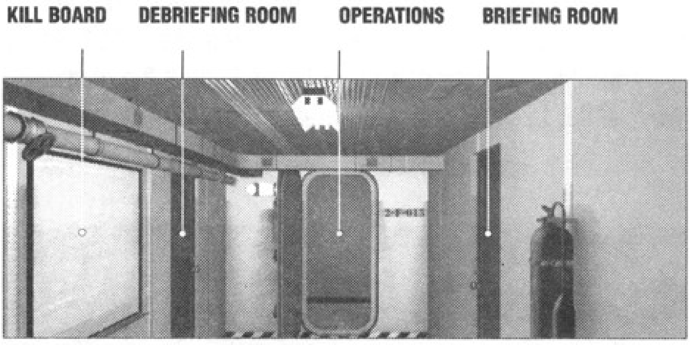
loading data
please stand by...

Note: *You will automatically report to your debriefing after you have returned to the carrier after each missionn.*

The Debriefing Room is located across the hall from the Briefing Room. It is where the Squadron Commander reviews your performance of the last mission. To review the last debriefing, place the cursor over the door to the Debriefing Room and left mouse click. Once you have activated the Debriefing Room, an animation plays of you walking into the room and sitting down.

The Debriefing Room contains two large monitors with bright red buttons. The left monitor presents textual information such as kills, success ratios, efficiency, and landings. The right monitor displays the map coordinates where the action took place.

KILL BOARD



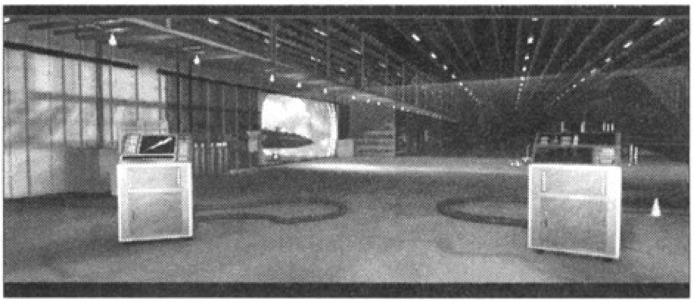
The Kill Board is a white board across from the fire extinguisher on Deck 2. It is kept outside the Briefing and Debriefing rooms so everyone can see it. Considered by many to be the most important "score" on the ship, the kills are a measure of accuracy as well as bravery. To examine the Kill Board, move the cursor over it and then left mouse click. An animation shows you walking to the board.

The Kill Board has two columns. The first column contains the names of all of the active pilots who are serving aboard the U.N.S. Peacekeeper, including your currently loaded pilot. "Saved pilots" that are not currently loaded are not shown on this list. The names are ranked from best (on top) to worst (on bottom). The second column lists the number of confirmed kills per pilot. When you are finished studying the board, press **[Esc]**.

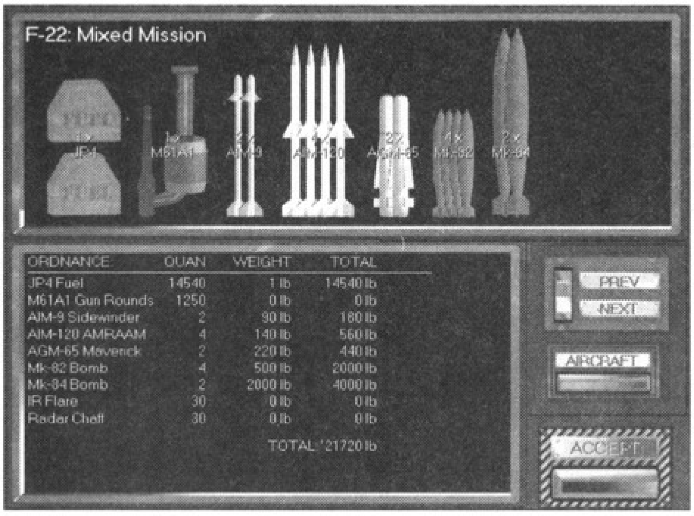
Note: *"Saved pilots" that are not currently loaded are not displayed on the Kill Board. To see their kills, you must go to the Roster Menu and load that pilot.*

DECK 3

Deck 3 or the "Hangar" is where you prepare for the next sortie. It is usually one of the busiest places on a ship. At the Hangar, you can arm your plane, change its decal, and start your mission.



WEAPONS LOADOUT



F-22: Mixed Mission

ORDNANCE	QUAN	WEIGHT	TOTAL
JP4 Fuel	14540	1 lb	14540 lb
M61A1 Gun Rounds	1250	0 lb	0 lb
AIM-9 Sidewinder	2	90 lb	180 lb
AIM-120 AMRAAM	4	140 lb	560 lb
AGM-65 Maverick	2	220 lb	440 lb
Mk-82 Bomb	4	500 lb	2000 lb
Mk-84 Bomb	2	2000 lb	4000 lb
IR Flare	30	0 lb	0 lb
Radar Chaff	30	0 lb	0 lb

TOTAL: 21720 lb

Different missions often require different weapons. For example, strike missions need more air-to-ground weapons than fighter sweeps. Generally, the Squadron Commander recommends a certain weapons package, but the ultimate decision is up to you. To choose your plane's armaments, click on the "kiosk" located on the right-hand side of the screen.

Once activated, an animation is played of you walking toward the weapons kiosk. The kiosk will then fill the screen. The menu shows several different weapons packages available for loading. Because the crew is aware of your orders, an appropriate weapons package has already been entered into the system. You can accept this default by pressing the "Accept" button or pressing **[Enter]**. However, if you want to change the armaments consider the different packages to choose from:

LONG RANGE ATA

This package is designed for long-range air-to-air combat. It is the best set of weapons for point/area defense missions. The AMRAAMs are considered to be the premier long-range air-to-air weapon, while Sidewinders have scored more kills than any other missile.

SHORT RANGE ATA

This package is intended for short-range air-to-air combat. It is the optimal set of weapons for fighter sweeps or escorts.

ATG BOMBS

This package is perfect for bombing missions where massive destruction is more important than pinpoint accuracy. It is the weapons package of choice for maximum devastation.

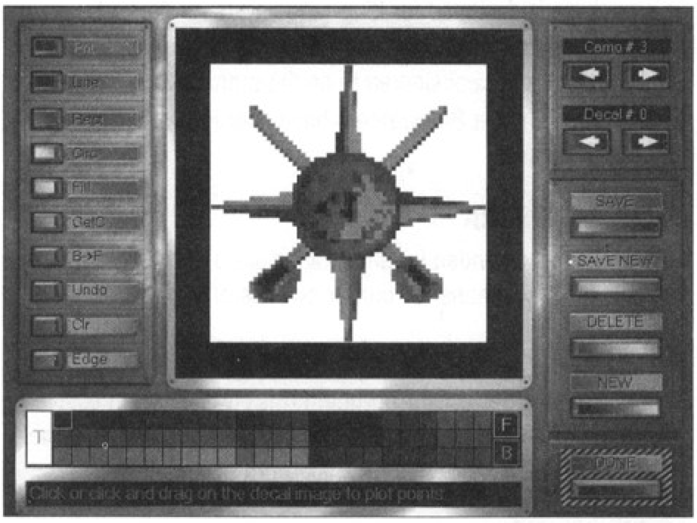
MIXED MISSION

This package is a balanced combination of bombs and missiles. It is a general purpose selection.

ATG MISSILE

The "smart" package is primarily made up of Maverick missiles. These deadly air-to-surface weapons use a television seeker to lock-on to a target in its field of view and track it automatically. This package is effective on "surgical strikes" and precision bombing.

PAINT SHOP

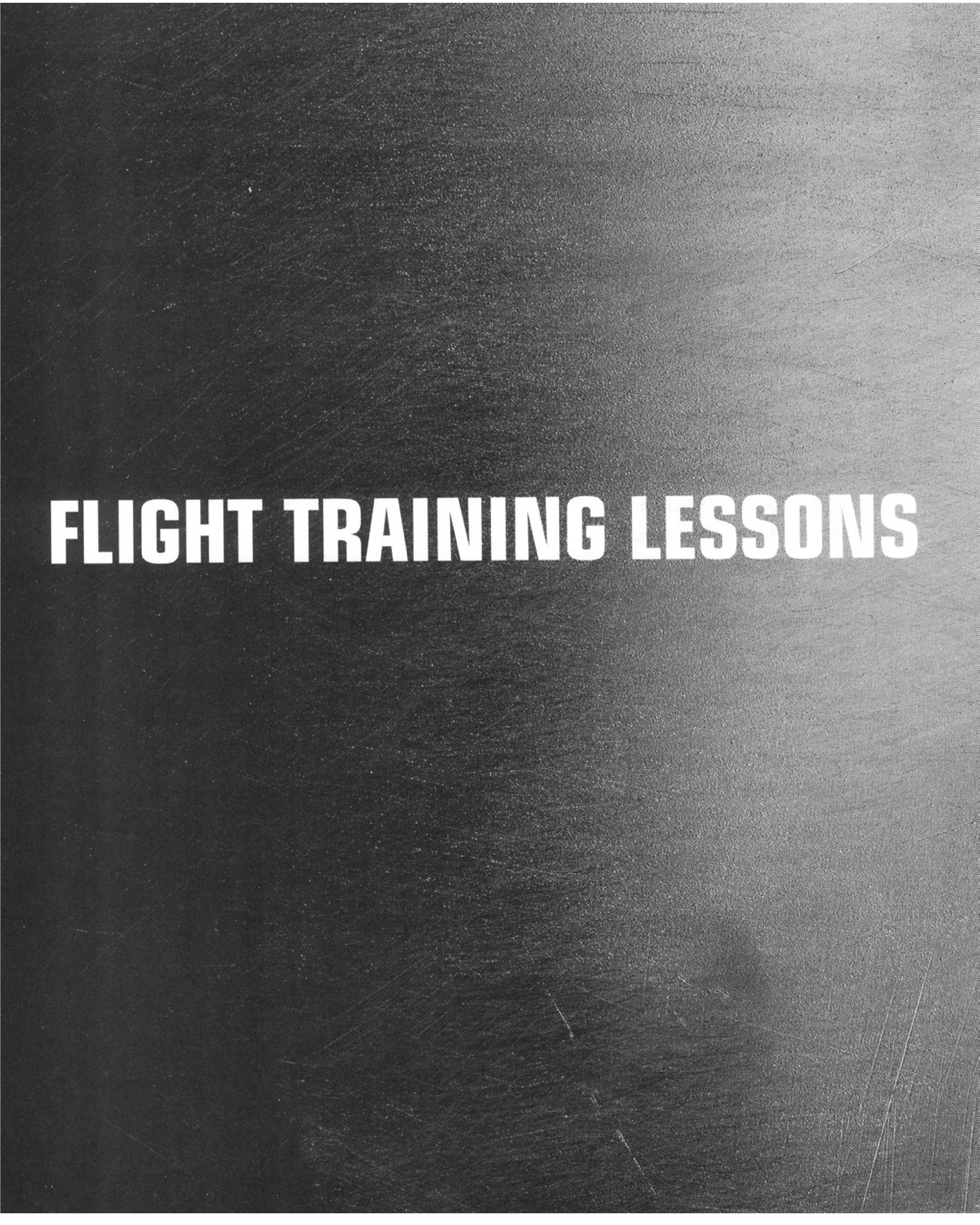

Pnt
Line
Rect
Circ
Fill
GetC
B->F
Undo
Clr
Edge
Camo # 3
Decal # 0
SAVE
SAVE NEW
DELETE
NEW
DONE
T
F
B

Click or click and drag on the decal image to plot points

Note: *The reds and yellows available in the Paint Room on the U.N.S. Peacekeeper are UN surplus phosphorous paints. Be warned, custom decals made with these colors will really stand out at night.*

FLY MISSION — [F]

After you have received your mission orders, loaded your armamants and reviewed the military encyclopedia, you want to start a mission. Click on the F-22N sitting in the Hangar or press **[F]** to fly the mission. Your orders and a map will be display in the instrument panel. Study it quickly. The next thing you see is the inside of your cockpit. Your plane is hooked to the catapult and is ready for take-off.



FLIGHT TRAINING LESSONS

INTRODUCTION

Welcome to flight school! JetFighter III includes a set of flight lessons that are a great way to learn to fly the simulator. If you have never flown a flight simulator before, we strongly recommend you start here. The lessons are designed to get you up and flying in no time. In fact, your first lesson begins in the air above the Andes Mountains. Your main objectives are to get a feel for the aircraft and enjoy the scenery!

Each lesson is intended for use in conjunction with the step-by-step manual instructions following the Flight Training Introduction. There are a total of thirteen lessons in JetFighter III:

#1 Basic Flying Skills
#2 Takeoff From Ground
#3 Waypoint Navigation
#4 Follow the Leader
#5 Air Weapons Training
#6 Carrier Catapult Launches
#7 Commanding Your Wingman
#8 Ground Landing and ILS Training
#9 Carrier Landings and CLS Training
#10 Ground Attack Training Part 1: Pre-designated Targets
#11 Ground Attack Training Part 2: CCIP Bombing
#12 Ground Attack Training Part 3: Targets of Opportunity
#13 Air Combat Maneuvering

Don't worry, these lessons won't be boring! In fact, it might seem like events occur too quickly to follow the steps in this manual. Tailor the speed at which you progress through the lessons by pausing or restarting them as often as necessary. Press **[Ctrl-P]** to pause the game if you need to catch up. When you are ready to resume flight, press **[Ctrl-P]** again. To restart lessons, first press **[Esc]** to enable the In-Flight menu. Second, press **[Enter]** to open the "Game" menu. Third, press the down arrow **[↓]** to select "Restart Current Mission" and press **[Enter]**.

Use this manual or the on-screen help menu while learning JetFighter III. To access on-screen help while flying: (1) press **[Esc]** to view the In-Flight menu, (2) press **[→]** to select the "INFO/HELP" heading, and (3) press **[Enter]** twice to select the "Help" option. The help screen lists all of JetFighter III's control keys.

Most importantly: Have fun! You'll bomb targets and win dog-fights in combat missions in no time!

BEFORE YOU START

First, you must first learn to travel through the United Nation's aircraft carrier—the UNS Peacekeeper. You can either "walk" through the ship or "jump" to any room you want. To **walk**, just use your mouse to point in the direction you want to go, and click the mouse button. For example, if you see a corridor with three doors, mouse-click on the door that you want to enter. Mouse-clicking near the bottom of your screen commands your character to walk backwards or exit a room.

The **jump menu** instantly takes you to any room in the ship. Place your mouse pointer in the upper portion of your screen to view the jump menu. Mouse-click on the button corresponding to the room you want to enter. Whichever method you choose to navigate through the Peacekeeper, your current location is always displayed in the bottom of your screen.

There are two ways to use the lessons. You can select them individually or use them as a "campaign." Selecting lessons individually allows you to use them in any order. A campaign is simply a set of linked missions; when you finish one mission, *JetFighter III* sets you up at the beginning of the next mission and keeps track of your progress. All of the flight lessons are linked together into a campaign called "Flight Training."

SELECTING LESSONS INDIVIDUALLY

JetFighter III refers to individually selected missions as *Instant Missions*. Instant Missions let you fly any mission in *JetFighter III* without affecting your campaign score. For example, if you are deeply involved in the Cuba campaign, you can select a flight training lesson from the Instant Mission Control Panel. Your performance won't affect the character's campaign score. To select a lesson individually:

1. Jump to the Operations room by mouse-clicking the "OPS" button on the **jump menu**.
2. Identify the **Instant Mission Control Panel** by moving the mouse pointer along the control console until "Operations: Instant Missions" appears in the bottom of your screen.
3. Mouse-click on the Instant Mission Control panel.
4. Mouse-click on either Campaign selection arrow at the top of the screen until "Flight Training" appears in the window below.
5. Locate the rocker switch near the screen's bottom right corner. It bears the labels "PREV" and "NEXT."
6. Mouse-click on "NEXT" until the training mission you want to fly appears under the campaign title.
7. Mouse-click on the "ORDERS" button to read your mission orders.
8. Mouse-click on the "BRIEFING" button to see a map of the mission.
9. Mouse-click on the "FLY" button to begin the training mission.
10. After flying the lesson, you will see a weapon statistics board and then be taken back to the Instant Mission control panel.

If you are flying the lessons as a campaign, you can still use this method to fly a specific lesson multiple times.

FLYING THE LESSONS AS A CAMPAIGN

Each time you create a new pilot, he starts out in the "Flight Training" campaign by default. If you are running *JetFighter III* for the first time, your pilot should be ready to fly his first training mission.

If you need to create a *new* pilot, follow these four steps: First, jump to the Operations Room by clicking the "OPS" button on the **jump menu**. Second, mouse-click on the "JETFIGHTER III ROSTER" at the control console's right end. Third, enter the new pilot's information into the roster. Leave the campaign set at "Flight Training." Fourth, mouse-click the "ACCEPT" button in the roster's upper left corner.

To fly through the training missions in Campaign mode, follow this basic procedure:

1. Go to the Briefing Room by mouse-clicking the "BRIEF" button on the **jump menu**.
2. Mouse-click on the Mission Transcript to read your mission orders. The transcript folder lies on the table to your left.
3. Mouse-click on the Mission Briefing screen in the center of the room to view a map of the training area.
4. Walk to the Hangar Deck by exiting the briefing room (mouse-click on the bottom part of the screen), and walking down the stairs (mouse-click on the stairs).
5. Start the mission by mouse-clicking on an aircraft.
6. After flying the lesson, you will receive a debriefing. Read the information and return to the Briefing Room for your next lesson.

After completing all the Flight Training lessons you will graduate to your first active duty campaign.

That's all there is to it. Now it's time to jump into the cockpit...

LESSON #1: BASIC FLYING SKILLS

This lesson will give you a chance to get a "feel" for flying in JF3 and enjoy the scenery. In addition to some basic flight maneuvers, the following steps introduce some basic aerodynamics that will help you better understand and fly your aircraft.

Before beginning you should be familiar with two important terms: *stall* and *velocity vector*. Once you begin flying you will see the *velocity vector* near the center of the Head's Up Display (HUD). It appears as a small circle with three small protruding lines. This symbol depicts a "vector" extending along your FLIGHT PATH. The difference between where your aircraft is pointing and your actual flight path is subtle, but important. Looking forward through the HUD simply shows the direction the aircraft's nose is pointed. Your flight path is the direction you are actually *traveling*. The direction of the aircraft's nose and it's flight path are not necessarily the same. For example, at a low airspeed, you may point the aircraft's nose up so you see mostly blue sky and little ground although it may "appear" you are climbing when, in reality, you are descending. The wing's inefficiency at low airspeeds explains this illusion. The velocity vector is most useful for navigating to an exact location. Orient the aircraft so the velocity vector obscures your destination (i.e. a mountain peak or the carrier deck). Keeping the velocity vector on the same point ensures you will eventually reach your destination.

While flying, you may *stall* the aircraft. An aircraft stalls when the smooth airflow over the wings becomes disrupted and the wings can no longer produce enough lift to maintain flight. Most commonly, stalls result from an excessively low airspeed. A horn and cockpit panel message warns you of an imminent stall. To remedy the situation, pitch down (toward the ground) and/or increase the power to about 80% **[8]**. Don't pitch down more than 5° below the horizon. Press **[Numpad 8]** or push the joystick forward to pitch down.

This lesson is very open ended. When it starts, you will be flying over a mountain range near Santiago, Chile. Your throttle will be set at 75% thrust as indicated in the upper left corner of your Heads Up Display (HUD).

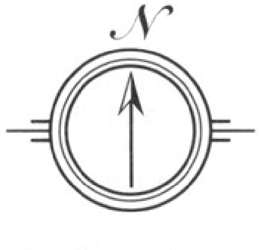
Lesson #1 quick reference keys:

KEY	**FUNCTION**
[Esc]	Opens/Closes the In-Flight menu
[→], [←], [↓] & **[↑]**	Move within the In-Flight menu
[Alt-A]	Toggle altimeter between MSL/AGL modes
Keyboard No keys	Adjusts power (in 10% increments)
[L]	Toggles Pitch Ladder on/off
[Numpad 4]	Roll left
[Numpad 6]	Roll right
[Numpad 8]	Pitch up
[Numpad 2]	Pitch down
[Z] or [Numpad 0]	Left Rudder
[X] or [Numpad Enter]	Right Rudder

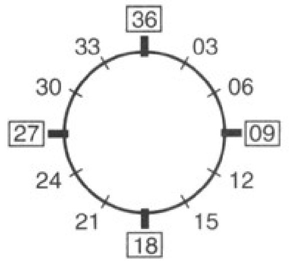
Completion Requirements: Fly around for at least five minutes practicing the maneuvers outlined below.

1. Once you are flying turn on the "No Crashes" option in the "Cheats" menu. Press **[Esc]** to bring up the In-Flight menu. The simulator pauses whenever you use the In-Flight menu. Press **[→]** several times until the "cheats" heading is highlighted. Press **[↓]** to open the cheats menu. Press **[↓]** several more times until you get to the "No Ground Crashes" option. Press **[Enter]** until "YES" appears next to "No Ground Crashes." This allows you to "bounce" off the ground instead of crashing into it!
2. Press **[Esc]** several times to return to flight mode.
3. Notice the altitude indicator on the HUD's right side. This "tape" displays your Altitude in thousands of feet. When you started the lesson, this display read about 5.5 (5,500 feet) above ground level (AGL).
4. Adjust your altimeter to display Mean Sea Level (MSL) instead of Above Ground Level (AGL) altitude by pressing **[Alt-A]**. (The reference section describes the difference between MSL and AGL altitude.) **[Alt-A]** toggles between the letters "S" and "G," which refer to MSL and AGL, on your altitude tape. Set the altimeter to "S." The altimeter should read about 12.0 (12,000 feet).
5. Press **[9]** to bring the engine up to 90% thrust. Watch the indicator in the upper left corner of the HUD increase to 90%.
6. Activate the "pitch ladder" by pressing **[L]**. Use the pitch ladder to establish consistent pitch and bank angles during climbs and turns. Steady pitch and bank angles yield smooth flight.

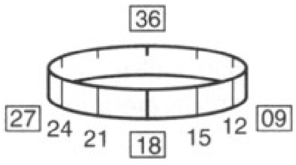
7. Perform a climb by applying some "back pressure" on the joystick (or press **[Numpad 2]**) until the horizon is in the lower third of your screen. Applying back pressure actuates a primary flight control called the elevator. The elevator is attached to tail of your plane and affects your pitch. Pitch is the rotation about an aircraft's lateral axis—the axis that extends from wing tip to wing tip. As you apply back pressure the horizon to appears to "drop" in your screen. This is called "increasing your pitch" or simply "pitching up." Be sure to keep the horizon in view since it provides important orientation ques. Once you've adjusted your pitch, release the joystick (or release **[Numpad 8]**).
8. USE A LIGHT TOUCH ON THE CONTROLS. Take it nice and slow; make small and smooth movements. Resist the urge to jerk the stick around. Save that for combat!
9. Notice your airspeed decrease as you climb. Deceleration occurs for the same reason a car slows down when it goes up a hill.
10. Climb until the altimeter reads 15.0 (15,000 feet). Remember the altimeter is the "tape" on the right side of the HUD.
11. Keep an eye on your pitch and altimeter to avoid excessive climbs. Beginners tend to climb continuously or too steeply.
12. As your climb approaches 15,000 feet, apply some forward pressure on the joystick, or press **[Numpad 8]**, until you are level again. Again, remember to do this BEFORE you reach 15,000 feet since the plane will continue to climb as you level-off. Pilots refer to this as "leading you altitude."
13. Add some forward pressure on the joystick, or press **[Numpad 8]**, to initiate a descent. Pitch down until the horizon is in the upper third of your screen. Again, don't overcontrol the aircraft.
14. Move the joystick left, or press **[Numpad 4]**, to turn the aircraft left. This affects the ailerons—a primary flight control governing roll. Roll is the rotation of the aircraft about its longitudinal axis—the axis extending from the aircraft's nose to its tail.
15. After you roll about 30° degrees from level, release the joystick allowing it to re-center (release the **[Numpad 4]** key). You will stay in a nice, easy bank.
16. Look at the strip of numbers along the top of the HUD. This indicator or "tape" shows your heading. The numbers will be sliding to the right and getting smaller. 27 means 270 degrees (west), 18 means 180 degrees (south) and so on.



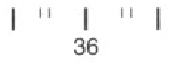
Fancy Compass Rose – typical of those seen on maps



A more detailed compass



Detailed compass on a circular tape



Actual heading tape from Jet Fighter III

17. You may notice a slow altitude loss. In rolling, you redirected the wing's lift. This renders the wings less effective in opposing gravity; an altitude loss results. To perform a level turn, apply a small amount of back pressure on the joystick (or momentarily press **[Numpad 2]**) as your roll angle increases.
18. Move the joystick to the right, or press **[Numpad 6]**, and level your wings. Release the stick slightly BEFORE you return to level, as the aircraft will continue to roll while you center the controls.
19. The *rudder* is another primary flight control that adjusts your heading. Rudder controls an aircraft's yaw. Yaw is the rotation of the aircraft about its vertical axis. Think of this as a "flat" heading change; the aircraft changes heading without rolling. Pilots usually *coordinate* the use of rudder and aileron to initiate *bank* when they want to turn the aircraft. In a *coordinated bank turn*, roll and yaw (ailerons and rudder) work together to turn the aircraft. The rudder is also useful for "fine tuning" your heading—making small changes without rolling. **[Z]** and **[X]** control left and right rudder respectively.

20. Turn to a heading of EXACTLY north (00 on the heading tape). This time, bank the aircraft using right aileron (right joystick or **[Numpad 6]**) *and* right rudder (**[X]**). Again, use only a 30° bank angle (30° from level flight). The rudder causes your heading to change more quickly—a useful tactic in dog-fights!
21. As your heading approaches 00, release the rudder and roll your wings level by moving the joystick to the left (or pressing **[Numpad 4]**). Remember to lead your heading upon roll-out since your heading will continue to change as you level your wings. Once level, use the rudder to "fine tune" your heading. Do this by pressing **[Z]** or **[X]** for left or right rudder.
22. With your wings level, maintain a constant altitude by adding forward or backward pressure on the joystick (or pressing **[Numpad 8]** or **[Numpad 6]**) until the altimeter stops moving. Reduce power to 40% by pressing **[4]**. In addition to slowing down, you will begin to loose altitude. Maintain a constant altitude by pitching up slightly. You are now in "slow flight."
23. Conversely, press **[9]** to increase your power to 90%. If you hold the same pitch, you will begin climbing. Maintaining your altitude while accelerating by slightly decreasing your pitch.
24. Once you are comfortable with shallow banks and climbs, try some steep maneuvers. Be careful though! A steep climb will result in a stall if your airspeed gets too slow.
25. While in a steep bank, pull back on the stick (move the joystick back or press **[Numpad 2]**). Watch your heading change much faster. This will come in handy during dog-fights!
26. Great! Now spend some time flying around. Don't worry, if you hit the ground. The "No Ground Crashes" option will bounce you back into the air. The most important point is to spend some time getting the feel for the aircraft.
27. When you are done, access the In-Flight menu by pressing **[Esc]**. Select the "Game" menu, then select "Auto Land" or "Return to Carrier" and press **[Enter]**.

LESSON #2: TAKEOFF FROM GROUND

This lesson will teach you to taxi (or drive) the aircraft on the ground and to safely take off from a land based runway. You begin on a taxiway near the end of runway 03 at Los Cerrillos Airport (SCTI) in Santiago, Chile.

Lesson #2 quick reference keys:

KEY	**FUNCTION**
[Numpad -]	External View
[<]	Zoom Out
[>]	Zoom In
Joystick Button #2	Pan using joystick
[Numpad 7]	Pan left
[Numpad 9]	Pan right
[Numpad 3]	Pan up
[Numpad Del]	Pan down
[F1]	Forward view. Also toggles virtual cockpit on/off
[+]	Increase power (1% increments)
[-]	Decrease power (1% increments)
[~]	Cut power (0% thrust)
[B]	Toggles wheel brakes on ground and Speed brake in air: on/off
[G]	Toggles gear: extended/retracted
[Alt-T]	Cycles through Time Compression Ratios: 1:1, 2:1, 3:1
[Alt-S]	Toggles Landscape Traversal mode: on/off

Completion Requirements: Takeoff from the ground without crashing.

1. Take a look around to get oriented. Change to an external view **[Numpad -]**, zoom out **[<]**, and pan around with the keys **[Numpad 7]**, **[Numpad 9]**, **[Numpad 3]**, and **[Numpad Del]** for left, right, up, and down respectively. If you have a joystick, pan around by holding button #2 down and moving the joystick. After examining the area, press **[F1]** to return to the cockpit.
2. Press **[+]** 5 to 7 times to bring the engine up to 5% - 7% thrust. This speed will allow you to turn and taxi nicely. Be careful not to taxi too fast since your aircraft doesn't handle too well on the ground – it was designed for flying!
3. You may find it easier to taxi while viewing the aircraft from a bird's eye external view. Use whichever method you are more comfortable with.
4. Use the rudder keys, **[Z]** and **[X]**, to taxi onto the runway; it is dead ahead. As you near the runway press **[Z]** to turn left and align yourself with the runway's centerline (the broken white line in the middle of the runway).
5. Press **[~]** to cut the power and **[B]** to apply the wheel brakes. You will slow down and come to a stop.
6. When you are ready to takeoff press **[9]** to bring your engines up to 90% thrust. Press **[B]** again to release your brakes and begin your *takeoff roll.*
7. Use the rudder keys **[Z]** and **[X]** to stay in the center of the runway.
8. Watch the airspeed display on the left of the HUD. When your airspeed approaches 18 (180 knots), begin your *takeoff rotation.* A takeoff rotation is the pitch increase initiating the transition from ground to flight operation. Gently pull back on the joystick or hold down the **[Numpad 2]** key. In a moment, you should be airborne!
9. When you are a couple hundred feet in the air, press **[G]** to raise your landing gear.
10. After takeoff, fly around and explore the scenery. Use the view keys to look around as you did when you were on the ground (see step #1 above).
11. If you wish to explore a distant area (i.e. a city or mountain peak), use the "Time Compression" or "Landscape Traversal" modes to reach the area more quickly. These are both simulator features and are not functions reproducible in a real jet.
12. Time Compression causes all events in the simulated world to occur two or three times faster. Cycle through these speeds by pressing **[Alt-T]**.
13. Landscape Traversal mode affects only your aircraft, allowing you to speed over the landscape without changing your heading or MSL altitude. For example, you could cheat and outrun an enemy aircraft with landscape traversal mode. **[Alt-S]** controls this mode.
14. When you are done, open the In-Flight menu by pressing **[Esc]**. Select the "Game" menu and "Return to Carrier" option.

LESSON #3: WAYPOINT NAVIGATION

This lesson teaches you to navigate using waypoints. Waypoints are navigation aids that help you find your way from one location to the next. They play an integral role in each combat mission since they guide you to and from your target. In this lesson waypoints will guide you over Concepcion International Airport (SCIE) and the UNS Peacekeeper. If you are already familiar with waypoints, you can skip this lesson and quickly review the Following Waypoint section in chapter 2.

This lesson starts at 2,000 feet near Conception, Chile. The HUD is in navigation mode as indicated by the abbreviation "NAV" near the HUD's lower left corner. The HUD's lower right corner shows information about the currently selected waypoint (i.e. WPT1). The solid triangle on the heading tape shows which direction you must turn to intercept the waypoint. This triangle is called the Navigation Director. Also, if the waypoint is roughly ahead of you, a hollow triangle appears in the HUD. This represents the actual waypoint and is called the waypoint designator. Fly toward the designator and you will eventually intercept the waypoint.

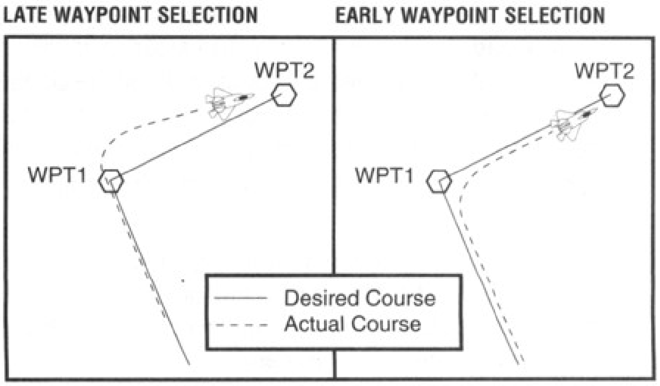
When this lesson begins you will be flying directly toward WPT1 on a 340° heading ("34" on the heading tape). The navigation director will be centered on the heading tape and the waypoint designator appears directly ahead of you. At first, you may not see the waypoint designator if it is obscured by the velocity vector. (Lesson #1, step #8 describes the velocity vector).

Lesson #3 quick reference keys:

KEY	FUNCTION
[F7]	Right MFD: Navigation Information/Air Targets
[N], [Shift N]	Navigation mode (and cycle through waypoints)
[M]	Toggles Map Display on/off
[F1]	Forward view. Also toggles virtual cockpit on/off

Completion Requirements: Navigate to within one mile of each waypoint. This mission has nine waypoints: WPT1 through WPT6, IAF, FAF, and CVN.

1. Maintain your course to WPT1 by keeping the waypoint designator centered in the HUD.
2. Check your Navigation Information Multi-Function Display (Nav MFD) by pressing **[F7]** until you see "NAVIGATION INFO" (you may have to press it twice if the "AIR TARGETS" display appears first).
3. Scroll through this screen, using **[N]** and **[Shift-N]**, to view all available waypoints. The currently selected waypoint is highlighted. **REMEMBER TO RE-SELECT WPT1 BEFORE CONTINUING.**
4. Check your map display by pressing **[M]**. The waypoints appear as green dots on the map.
5. Press **[F1]** to return the forward-looking virtual cockpit view.
6. Look at the cluster of data in the HUD's bottom right corner. It contains information about the currently selected waypoint, including its name and distance from you (in miles).
7. About 1 mile before you reach WPT1, press **[N]** to select WPT2. The waypoint designator will move (possibly beyond the HUD's field of view) and the navigation director on the heading tape will shift right. Since the navigation director shifted to the right, you should turn right for the next waypoint. Look for the waypoint designator as you turn. Once the waypoint designator appears in the HUD, fly towards it like you did for the last waypoint.
8. Seek the next several waypoints in a similar manner.
9. The next few legs lie above the Rio Biobo river that spills into the Pacific Ocean near Concepcion, Chile. Waypoints 5 and 6 take you north for a low pass over Concepcion International Airport (SCIE). The last three waypoints have special names: IAF, FAF, and CVN. These letters represent the Initial Approach Fix, Final Approach Fix, and the UNS Peacekeeper (the letters CVN designate nuclear powered aircraft carriers). As you may have guessed, these special waypoints help pilots align for landing approaches to the Peacekeeper. For now, just over-fly the carrier. (Lesson #9 introduces carrier landings). Some waypoints are more closely spaced, so stay alert! Be sure to select your next waypoint **[N]** about 1 mile BEFORE you reach the one that you are currently flying toward. Selecting waypoints early allows for time to turn toward the next waypoint—otherwise your turn might misalign your course.


LATE WAYPOINT SELECTION **EARLY WAYPOINT SELECTION**

10. Feel free to fly around some more and experiment with the navigation system. Also, you can select previously visited waypoints by pressing **[Shift-N]**.
11. When you feel comfortable using the waypoints, open the In-Flight menu by pressing **[Esc]**. Select the "Game" menu and the "Auto Land" option.

LESSON #4: FOLLOW THE LEADER

Lesson #4 introduces formation fight. You will follow a "wing leader" through a practice course of waypoints. (Track his waypoint changes if you want; see lesson #3.) You will also learn to visually scan for other aircraft and use your targeting system to locate lost or distant objects.

Let's learn a little about the targeting system before beginning. This system provides several useful items of information about targeted objects:

A. If you loose track of your target, the targeting system tells you which way to turn in order to re-intercept the target. Turning information appears as a red vertical line in your heading tape. This line is called the target designator.

B. A target designator box appears around your target helping you locate targets that lie beyond visual range.

C. The targeting system indicates your distance from a target.

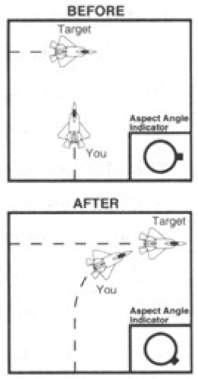
D. It indicates your target's heading.

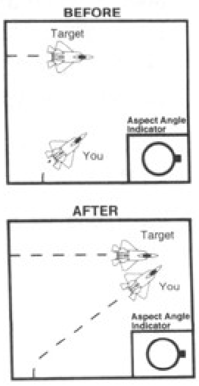
E. The targeting system also provides closure rate information (in feet per second: f/s).

The target director displays **turning information** in the heading tape. Its position in the heading tape indicates the direction to turn. It works like the navigation director that you use during waypoint navigation. For example, if the target director is on the heading tape's left side, you should turn left to intercept the target.

The **target designator box** functions identically to the waypoint designator that you use during waypoint navigation. It appears in the HUD when your target lies roughly ahead of you. Significantly, waypoints are static and air targets move. Hence you must maneuver your aircraft in order to intercept the target.

Strange as it seems, flying DIRECTLY toward the target designator box may not be the best way to intercept air targets—for the same reason a quarter back leads his throws to a wide receiver. Although flying directly toward the box would work, it wouldn't provide the most *efficient* interception course. Consider the scenario depicted here:





In both cases, the target is passing from your left to right directly ahead of you. Figure A shows what happens when you head directly for the target. You end up flying along a curved path that is much longer than the straight path shown in figure B.

You may ask, "How do I know which direction the target is flying if he is beyond visual range? After all, the whole point of the designator box is to help me intercept distant targets." The answer lies in the aspect angle indicator. Look at the circle in the center of the HUD. The aspect angle indicator is a little dot located along the circle's circumference. The aspect angle indicator indicates the target's HEADING relative to your POSITION. Formally, the aspect angle is the angle between the target's tale and your line of sight. Think of this as the "side" or "orientation" of the enemy's aircraft that you would see of you were close enough. The following table simplifies this concept:

Position of Aspect Angle Indicator on the circle	**Aspect of enemy (what you would see if you were close enough)**
Top of the circle	Nose
Bottom of the circle	Tail
Left side of circle	Left wing
Right Side of circle	Right wing

You should realize your heading makes no difference upon the aspect indicator's location – only your position matters. Look at the "before" pictures in figures A and B. In both cases, the aspect angle indicator is near the circle's 9 O'clock position indicating the target was crossing from left to right. Your best option is to turn to the right and aim for a point ahead of the target designator box (as in figure B). This yields a more efficient interception.

Closure rate is the rate at which the gap between you and your target changes. This comes in handy while intercepting distant targets.

When this mission starts check your 3 O'clock position for a friendly F-22. This is your wing leader whom you are to follow around a training course over Concepcion, Chile. Your goal will be to remain as close as possible to him.

Lesson #4 quick reference keys:

KEY	FUNCTION
[Numpad -]	External view
Joystick Button #2	Pan using joystick
[Numpad 7]	Pan left
[Numpad 9]	Pan right
[Numpad 3]	Pan up
[Numpad Del]	Pan down
[F1]	Forward view.
[+], & **[-]**	Adjust power (1% increments/decrements)
[Z], & **[X]**	Left and Right Rudder
[B]	Air Brake
[Enter]	ATA mode (and cycle through ATA weapons)
[N] & **[Shift-N]**	Navigation mode (and cycle through waypoints)
[;]	IFF Discriminator – Cycles through target selection modes: All/Hostile/Friendly
[Y]	Select closest target
[T]	Cycle through all targets
[U]	Select the target that lies most directly ahead of you

Completion Requirements: Follow your wing leader through (at least) one lap around the waypoint course.

1. Locate your wing leader by checking your 3 O'clock position. If the Cockpit panel obscures your view, press **[P]** to hide it. Pan right for a better view by pressing **[Numpad 9]**. Alternatively, pan by holding joystick button #2 down and moving the stick. Press **[F1]** or tap joystick button #2 to re-center your view.
2. Use different views to look at your leader. Press **[Numpad -]** for an external view of your aircraft. Pan around using **[Numpad 7]**, **[Numpad 9]**, **[Numpad 3]** or **[Numpad Del]** until you see him. Again, moving the joystick while holding button #2 does the same thing.
3. You can also look around from within the virtual cockpit. Press **[F1]** for a forward-looking cockpit view. Toggle the panel off or on by pressing **[P]** again. Once the panel is off, use the same controls as before to search for your leader.
4. Make small power adjustments (**[+]** and **[-]**) in order to vary your distance from the wing leader. A five or six percent adjustment should be plenty.
5. Keep your velocity vector EXACTLY on his tail. The rudder (**[Z]** and **[X]**) should help "fine tune" your heading.
6. Check your airspeed. When this lesson began your wing leader and you were flying at 500 knots. If you fly faster than 500 knots you will close on your wing leader – and possibly pass him by.
7. Outrunning a lead aircraft is a common error among beginners. Pay close attention to your separation in anticipation of overtaking him. If you pass him, reduce your power to 60% **[6]** and apply the air-brake **[B]**.
8. Be ready for his first turn. He will be more difficult to keep track of during the turn.
9. Use your targeting system to track your wing leader. To activate the system, press **[Enter]** until "ATA" appears in the HUD's lower right corner.
10. Press **[;]** until "A" appears near the bottom of the HUD. **[;]** controls your "Identify Friend of Foe Discriminator" (IFF). It allows your weapons system to target all radar returns (as opposed to restricting targets to enemy aircraft).
11. Press **[Y]** to "lock" onto the nearest radar return. If multiple targets exist in the area, press **[T]** to cycle through them. Continue cycling through the targets until "F-22" appears in the HUD's lower right corner; this is your wing leader.
12. Turn toward the target director until the green target designator box appears in the HUD.
13. The **closure rate** information appears just below "F-22" in the HUD's lower right corner. Look at this number and adjust your power accordingly. For example, say the closure rate is large and negative. Hence, your wing leader is quickly outrunning you. You should increase your power to catch up with him.
14. If you stray far from your wing leader, avoid excessive speeds while trying to catch-up. Excessive speeds yield large closure rates. Deciding when to begin deceleration is nearly impossible since you can't even see the other aircraft until it is too late.
15. Follow your wing leader around the course of waypoints at least once.
16. When you are done, open the In-Flight menu by pressing **[Esc]**. Then select the "Game" menu and the "Auto Land" option.

LESSON #5: AIR WEAPONS TRAINING

In this mission, you will takeoff from the ground and destroy three airborne drones: a MiG-29, SU-27, and B-707. You will be asked to use a different weapon to destroy each drone. They are flying straight and level, thereby simplifying the targeting procedure.

Lesson #5 quick reference keys:

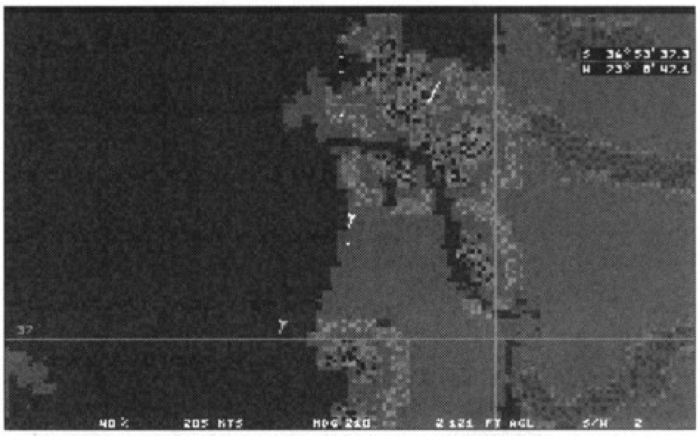
KEY	**FUNCTION**
[F6]	Radar MFD
[M]	Map View
[B]	Air Brake
[Enter]	ATA mode (and cycle through ATA weapons)
[N], [Shift-N]	Navigation mode (and cycle through waypoints)
[;]	IFF Discriminator – Cycles through target selection modes: All/Hostile/Friendly
[Y]	Select closest target
[T]	Cycle through all targets
[U]	Select the target that lies most directly ahead of you
[Space]	Fire weapon
[<], [>]	Zoom in and out
[F9]	Tactical View
[F10]	Missile View

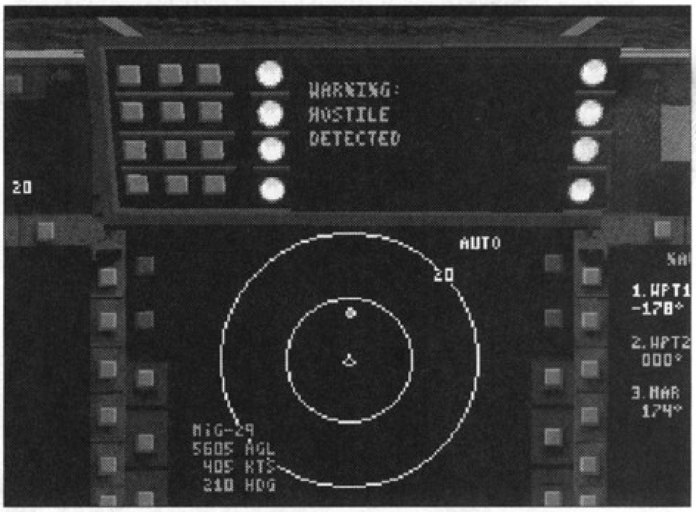
Completion Requirements: Destroy all three drone aircraft.

1. Take off, retract your gear **[G]**, and proceed to waypoint #1 at 100% military thrust **[0]**. (See lessons 2 and 3 to learn about takeoffs and waypoints.)
2. Press **[;]** until "A" appears near the bottom of the HUD. This allows your weapons system to target all radar returns (as opposed to restricting targets to enemy aircraft).
3. Use your radar **[Alt-R]** to locate the targets while enroute. On the radar display, objects appear as dots whose color connotes information about the object:

COLOR/SYMBOL	**MEANING**
Red	Enemy Target
Green	Friendly
White	Missile
Gray	Unidentified Object
White	Circle Surrounds the currently selected target
Bold	Object is above your altitude

4. The map display **[M]** uses colors similarly, but arrowheads – are used instead of dots. The arrow-heads point in the target's direction of travel. Your weapons system will notify you when any hostile target is within radar range.

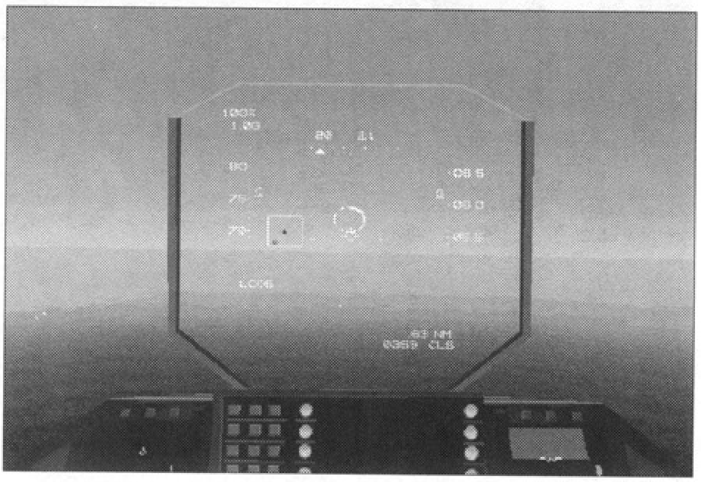



WARNING:
HOSTILE
DETECTED

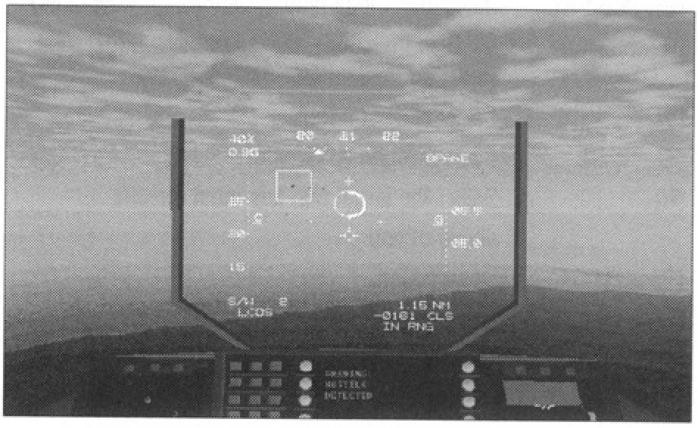
5. When you are 5 miles from WPT1 set your power to 90% by pressing [9].
6. Arm an AIM-9 Sidewinder missile by pressing **[Enter]** until you see "S/W" near the HUD's lower left corner. The quantity of missiles remaining onboard appears just to the right of the letters "S/W." Also, the aiming reticle appears in the center of the HUD. The aiming reticle looks like a circle with a small dot in the center. Ignore it for now; it will become important in a moment.
7. Destroy the MiG-29 first. Three methods exist for choosing among available targets:

SELECTION KEY	TARGETING FUNCTION
[Y]	Selects the closest target
[U]	Selects the target that lies most directly ahead of you in center of HUD
[T]	Cycles through all available targets.

8. Press **[T]** to cycle through targets until "MiG-29" appears in the HUD's lower right corner.
9. As you approach the MiG, watch for the diamond shaped missile seeker to move toward the target designator box. When the missile seeker reaches the box, you will hear a solid tone and the diamond will grow larger indicating a successful radar lock.
10. BE CAREFUL NOT TO PASS YOUR TARGET! This is a common error among beginners. Pay close attention to the information in the HUD's lower right corner – especially the closure rate information which shows how fast (in feet per second) you are approaching your target.



11. A large (positive) closure rate implies you are quickly gaining on your target. In this case you may need several miles to slow down in order to match his speed and remain behind him. If you approach the MiG-29 at 320 feet per second at 750 knots (100% thrust), it will take about 0.5 miles to match his speed. Hence, you should reduce your power when you are further than 0.5 miles from him. Otherwise, you must use your speed brake **[B]** to slow down more quickly.
12. When you near the target set your power to 58% by pressing **[6]** once and **[-]** twice. Also, make sure the gear **[G]** and speed brake **[B]** are retracted by confirming the absence of the words "GEAR" and "BRAKE" in the HUD's upper right corner. This yields an approximate 400 knot airspeed matching your airspeed to the drones'. (A near zero closure rate should result.)
13. Fine tune your power (by pressing **[-]** or **[+]**) in order to approach the MiG-29 more closely.
14. Use the aspect angle *indicator* (see lesson #4) to align your aircraft *behind* the target. Missiles track targets more effectively when the target is fired upon from behind.



15. When you are approximately 2.2 miles from the drone, the *range circle* becomes highlighted around the *aiming reticle's* circumference. The aiming reticle is the circle in the HUD's center. The range circle indicates the target is within range of your currently selected weapon. As you approach the MiG-29, the circle's highlighted portion disappears in a counter-clockwise fashion. The highlighted portion corresponds directly to the size of the gap between you and your target. It continues to disappear as long as you approach the target.
16. Press **[Space Bar]** or the corresponding joystick button to fire the Sidewinder.
17. Watch your missile head toward the drone. If by chance the missile fails to hit the target, fire another. If you hit the target, the word "Destroyed" will appear in red near the bottom right corner of the HUD.

18. Target the SU-27 similarly, but this time destroy him with an Advanced Medium Range Air to Air Missile (AMRAAM).

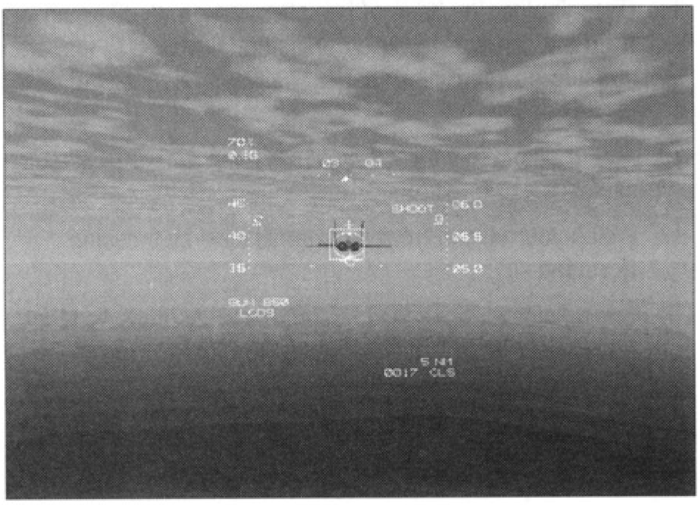
19. Cycle through your weapons using **[Enter]** until "AM" appears in place of "S/W" in the lower HUD's lower left corner. Lock your weapons system on the SU-27 using **[Y]** or **[T]** as you did before.

20. Again, press **[Space Bar]** or the corresponding joystick button to launch the AMRAAM.

21. Use the missile view **[F10]** to watch the missile seek and destroy the target. Once the missile detonates, you will see a steady cam view of the explosion. Shortly after the explosion your view returns to its previous perspective (i.e. virtual cockpit view). If you wish to return to the cockpit before the missile explodes, press **[F1]**.

22. Try your guns on the B-707. Use your throttle to approach him. Again, be careful not to pass him by. As before, cycle through your weapons using **[Enter]** until "GUN" appears in the lower left of the HUD. Guns require a little more finesse.

23. Maneuver your aircraft so the small dot in the center of the aiming reticle is EXACTLY on the B-707.



24. Alternatively, you may find it easier to align yourself at the target's 6 O'clock position and zoom in on him **[<]** before firing. Use whichever method works best for you.

25. Press **[Space Bar]** or the corresponding joystick button to fire the cannon. Fire in "bursts" by holding the fire control down for short intervals.

26. After destroying all three drones, open the In-Flight menu by pressing **[Esc]**. Select "Auto Land" from the "Game" menu. Alternatively, if you want to fly this mission again select "Restart Current Mission" from the "game" menu.

27. If you're looking for a challenge, restart the mission and increase the gun aiming difficulty. Restart the mission by opening the In-Flight menu and selecting the "Restart Current Mission" option. To increase the aiming difficulty, press **[Esc]** to bring up the In-Flight menu and select the "Cheats" pull down menu. Arrow down [↓] to "Gun Aiming Ease" and press **[Enter]**. This makes gunning down enemy targets more difficult.

LESSON #6: CARRIER CATAPULT LAUNCHES

Since carrier deck space is so limited, engineers have designed powerful steam driven catapult launches that accelerate aircraft from 0 to 125 knots in less than 200 feet within 3 seconds. Lesson #6 allows you to practice launches. Additionally, you will learn to look around the *JF3* world using some new views.

Lesson #6 quick reference keys:

KEY	FUNCTION
[Numpad -]	External view
[Numpad 7]	Pan left
[Numpad 9]	Pan right
[Numpad 3]	Pan up
[Numpad Del]	Pan down
[Numpad *]	Carrier tower view
[F1]	Forward view.
[P]	On/off virtual cockpit
[F2] - [F4]	Virtual cockpit preset views
[F5] - [F8]	Virtual cockpit MFD displays

Completion Requirements: Perform a carrier launch without crashing.

1. Let's inspect the carrier deck before takeoff. Press **[Numpad -]**, for an external view. You will see the tail of your plane.
2. Zoom out **[<]** and pan around, using **[Numpad 7]**, **[Numpad 9]**, **[Numpad 3]**, and **[Numpad Del]**, for a bird's eye view of your surroundings. Joystick users can pan around by holding button #2 down and moving the stick.
3. Press **[F1]** (one or two times) to return to the forward looking cockpit view *with* the panel displayed. The panel is part of the virtual cockpit.
4. Using the same numpad keys as before (or the joystick), look around inside the cockpit. Your view will shift as if you were moving your head around.
5. Panning is great for viewing scenery or distant targets, but dogfights require faster head movements. The keys **[F1]** through **[F4]** "snap" to one of 4 preset views – try them out.
6. The keys **[F5]** through **[F8]** allow you to look within the aircraft at the various display panels. Some of these displays have more than one mode. Cycle through display modes by repeatedly pressing the same key.
7. After you've looked around, it's time to launch. Press **[F1]** to look forward. Since carrier takeoffs require maximum acceleration, you must use full afterburner [\]. Once the engines spool up, the catapult launches you forward off the carrier deck like a big sling shot.
8. You must pull up slightly after you leave the carrier deck – unless you want to go fishing!
9. Once airborne, retract your gear **[G]** and adjust your power as necessary using the keyboard number keys.
10. Access the In-Flight menu by pressing **[Esc]**. Open the "Game" menu and select "Restart Current Mission." This lets you try another launch.
11. Once you get the hang of launches, watch your launch from the carrier's tower by pressing **[Numpad *]** just after you add power. Remember **[F1]** always returns your view to the cockpit.
12. Now try the fly-by view. Press **[F11]** just *after* the catapult launches you forward.
13. Watch your takeoff from an external view by pressing **[Numpad -]**.
14. When finished, open the In-Flight menu by pressing **[Esc]**. Then select "Auto Land" or "Return to Carrier" from the "Game" menu.

LESSON #7: COMMANDING YOUR WINGMAN

Fighter pilots rarely fly combat missions without *wingmen.* A wingman is a friendly aircraft that helps the *wing leader* (you) with his mission. While enroute, wingmen usually fly in formation near their wing leader. In battle, he takes offensive and defensive orders from his leader.

Lesson #7 familiarizes you with *JetFighter III's* wingman commands: attack **[Alt-G]**, follow **[Alt-F]**, and hold **[Alt-H]**. (Hint: these letters stand for "Go Attack," "Follow," and "Hold." Also, notice these keys lie side-by-side on the keyboard.) A mock city has been constructed in the Andes mountains. The city's buildings will serve as ground targets and three MiG-29 aircraft in a loose patrol over the city are your air targets.

Lesson #7 quick reference keys:

KEY	FUNCTION
[Alt-G]	Wingman command: Go attack
[Alt-F]	Wingman command: Follow player
[Alt-H]	Wingman command: Hold
[Backspace]	Cycles through ATG weapons
[T], [Shift-T]	Cycle through targets
[Y]	Selects the closest target
[U]	Selects the target that lies most directly ahead of you
[F9]	Tactical View
[xx]	Wingman view
[Enter]	ATA mode (and cycle through ATA weapons)
[;]	IFF Discriminator – Cycles through target selection modes: All/Hostile/Friendly

Completion Requirements: Your wingman must destroy all three air targets and at least three ground targets.

1. Lesson #6 begins at 800 feet enroute to WPT1. The mock city lies near this waypoint. If you become lost, use WPT1 to re-locate the city. (See lesson #3 if you aren't familiar with waypoints.)
2. Your wingman will be at your 3 O'clock position. To look at him press **[-]** for external view and pan around to see him in position. **[F1]** returns you to the forward view.
3. Command your wingman to attack a ground target. To do so you must be in Air to Ground (ATG) mode. Press **[Backspace]** until you see "ATG" appear near the HUD's bottom left corner. Now you're ready to select a target and issue the attack command.
4. Press **[F7]** until your "NAVIGATION INFO" MFD appears. You may have to press it twice. Along with waypoint 1 (in green), your Navigation Information MFD shows all **pre-designated** targets (in brown). These are targets that mission planners pre-programmed into your navigation system before you left the carrier.
5. Cycle through targets by pressing **[T]** or **[Shift-T]**. The highlighted name corresponds to the currently selected target. Select whichever target you want your wingman to destroy.
6. You can also select targets without looking at the Navigation MFD – simply press **[T]** or **[Shift-T]** while looking at the HUD. The name of the currently selected target appears in the HUD's lower right corner.
7. After selecting a target, use your navigation director to help you locate it. If you completed lesson #3 you already know how to do this since pre-designated targets are similar to waypoints – but we'll briefly recap the procedure anyway: Simply turn toward the navigation director in your heading tape. As the navigation director centers, look for the target designator box near the HUD's center. The ground target is in the center of this box. Maneuver your aircraft so the box centers in your HUD. If you keep the box centered, you will eventually reach the target. The box is analogous to the waypoint designator that would appear if the target was a waypoint.
8. Command your wingman to attack this target by pressing **[Alt-G]**. This orders him to attack whatever target you have selected.
9. Both your panel and your wingman's voice (if you have a sound card) will verify that your command was received. The wingman will break formation and attack the target.

10. You can watch the wingman's progress in several ways:
    - Press **[F9]** for tactical view.
    - Pan around as in previous lessons: press **[Numpad -]**, for an external view. This shows you the tail of your plane. Zoom (**[<]** or **[>]**) as necessary and pan around, using **[Numpad 7]**, **[Numpad 9]**, **[Numpad 3]**, and **[Numpad Del]**.
    - Pan around by holding joystick button #2 down and moving the stick.
11. The wingman will continue to fire upon the target until he destroys it. When he is done he will "form up" by returning to your 3 O'clock position.
12. Remain near the target while your wingman destroys it. When your wingman fulfills his order, the word "DESTROYED" appears in red near the HUD's bottom right corner. (Assuming you have not selected a new target.)
13. Once the target is destroyed press **[Alt-F]**. This commands him to follow you. Like before, both your panel and your wingman's voice confirm that your command was received.
14. Set your power to 50% thrust **[5]** allowing your wingman to catch up more quickly.
15. As he approaches you, navigate back to the city at WPT1.
16. Once your wingman reestablishes formation with you, press **[Alt-H]** a command your wingman to enter a holding pattern at his current location. This is useful if you want him to patrol an area for hostile aircraft while you conduct a bombing run. If hostiles appear, command your wingman to attack them.
17. Issue an air attack command now. As before, you must be in Air to Air mode (ATA) mode in order to issue an air attack command. Enter ATA mode by pressing **[Enter]** until "ATA" appears at the bottom left of the HUD.
18. Target one of the three drones by pressing **[T]** or **[Shift-T]** until you see "MiG-29" appear in the HUD's lower right corner.
19. Press **[Alt-G]** (As you did for the ground target) to instruct your wingman to destroy the drone. Adjust your view to your liking.
20. *Unlike any other mission*, this lesson places your wingman in a special weapons mode: he has the luxury of unlimited ordnance. So have some fun! Watch from above as you command him to wreak havoc upon the defenseless town!
21. When you are done, access the In-Flight menu by pressing **[Esc]**. Then select the "Game" menu and the "Return to Carrier" option.

LESSON #8: GROUND LANDING AND ILS TRAINING

Lesson #8 prepares you for the demanding task of landing a jet aircraft. The Instrument Landing System (ILS) is a navigation aid that guides your approach to the landing strip. This lesson begins about 2.5 miles before the Initial Approach Fix (IAF). The IAF serves as a starting point that aligns you with the runway.

When this lesson begins you will be aligned and configured for a "straight in" approach to the runway. The HUD will be in navigation mode with the Initial Approach Fix (IAF) selected. The IAF is just like any other waypoint, except it identifies the beginning of an instrument approach. Fly DIRECTLY to this waypoint. Precision is very important since arriving at the correct altitude ensures proper glide slope interception.

Your primary tasks are to slow down, descend, and maintain your course. Stay sharp though! You will soon realize that this isn't as easy as it sounds.

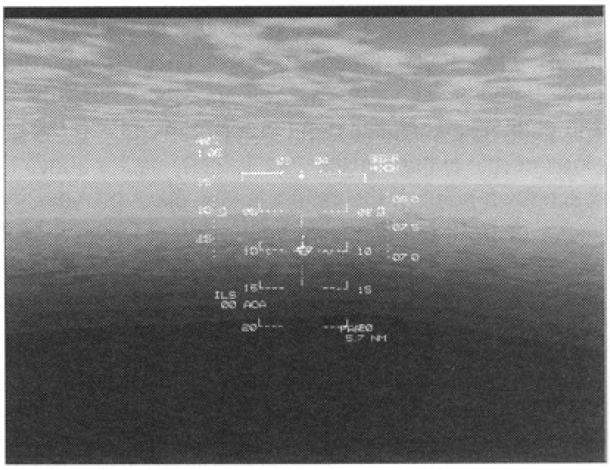
Before using the ILS you should read about the "Instrument Landing System" (in the Appendix). This section explains procedures and terms that will greatly simplify this lesson.

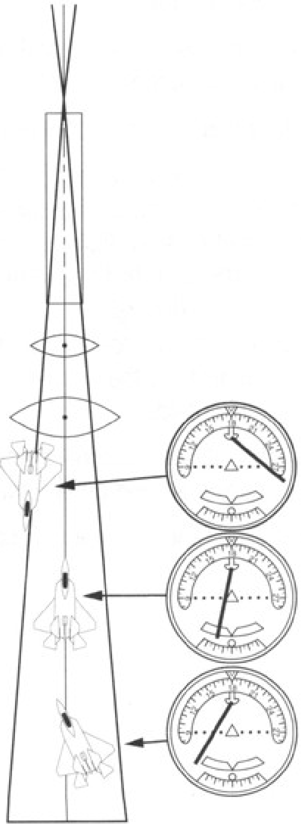
Lesson #8 quick reference keys:

KEY	**FUNCTION**
Keyboard Number Keys	Adjusts your power (in 10% steps)
[-], & [+]	Adjusts your power (in 1% steps)
[G]	Extend/Retract landing gear
[N], **[Shift-N]**	Navigation mode (and cycle through waypoints)
[Z], & **[X]**	Left and Right Rudder
[~]	Cut power (0% thrust)
[B]	Air brake in air, wheel brakes on ground

Completion Requirements: Perform a safe ground landing using your ILS.

1. As you pass the IAF power down to 41% (press **[4]**, then [+]), select the Final Approach Fix (FAF) **[N]**, and begin tracking the localizer and glide slope (the "Instrument Landing System" section defines these and other terms that appear in this lesson).
2. Position your aircraft as to properly align the Course Deviation Indicator (CDI) and the glide slope needle. They should cross in the Off Course Indicator (OCI) near the HUD's center. When they do you are on course.





3. While you track the localizer, make small heading corrections using only the rudder. Press **[Z]** and **[X]** to yaw left and right. Small corrections can slow the CDI's rate of change by establishing shallow intercept angles. An intercept angle is the angle at which you approach the localizer or glide slope. Shallow intercept angles prevent over-shooting the desired course (a common error among beginners). Only use the ailerons to keep your wings level.

4. When you are 1 mile outside of the IAF, select the FAF by pressing **[N]**. If you drifted off course, begin your correction now (if you haven't already). You are off course if the CDI and glide slope needles don't cross in the OCI. If the glide slope needle is high, place your velocity vector above the touchdown point. If the needle is low, place the velocity vector below the touchdown point. If the CDI is off-center, place the velocity vector between the navigation director and the CDI. See the "Instrument Landing System" in the Appendix.
5. One mile before the FAF, select the airport's waypoint (SCIE^3) **[N]** and place the velocity vector EXACTLY on the *approach end* of the runway. The approach end is the end of the runway you want to land on.
6. Correct your course as necessary and place the velocity vector back on the touchdown point.
7. 0.4 miles before touchdown cut the power by pressing **[~]**.
8. As the engine spools down (almost immediately), add a SLIGHT amount of joystick back pressure to initiate a *flare*. A flare is the transition from flight to ground operations. Ideally, it begins about 70 feet above the runway and continues until touchdown. Throughout a flare your pitch should be slowly and smoothly increasing while your descent rate and airspeed diminish. By the time you touch down you should satisfy two criterion:

- Assume a pitch that allows your main landing gear (the two back tires) to touch the ground before your nose gear.
- Let the airspeed drop to just above stall speed.

Perform a flare by momentarily pressing **[Numpad 2]** or GENTLY pulling back on the joystick.

9. Just after touchdown apply the wheel brakes **[B]** and slow to a stop.
10. Use the rudder pedals (**[Z]** and **[X]**) to steer keeping your aircraft in the center of the runway.
11. Don't get discouraged if your first landing attempt is not picture perfect. You will probably make several attempts before you get it right – but with a little practice you'll be making beautiful landings every time. To attempt another landing press **[Esc]** to access the In-Flight menu. Then select the "Game" menu and the "Restart Current Mission" option.
12. Once you've mastered airfield landings, you are ready for the ultimate challenge – carrier landings.

LESSON #9: CARRIER LANDINGS

Many military pilots jokingly refer to carrier landings as "trying to land on a postage stamp." Now it's your turn to land a 28,000 pound aircraft traveling at 225 knots on an 800 foot runway!

The Carrier Landing System (CLS) functions identically to the ILS, and will help you align your approach with the carrier. In fact, this lesson is almost identical to lesson #8, except you'll be landing on a carrier instead of a landing strip.

Before flying this mission you should read the section titled "Instrument Landing System" (Appendix). It contains some extremely helpful tips on flying approaches.

Lesson #9 quick reference keys:

KEY	**FUNCTION**
[G]	Extend/Retract Landing Gear
[A]	Extend/Retract Arrestor Hook
[N], **[Shift-N]**	Navigation mode (and cycle through waypoints)
[Enter]	ATA mode (and cycle through ATA weapons)
[Z], and **[X]**	Left and Right Rudder
[~]	Cut power (0% thrust)
[\]	Full Afterburner (AB 5)

Completion Requirements: Perform a safe carrier trap using your CLS.

1. You must first configure your aircraft for landing. Press **[G]** and **[A]** to extend your gear and arrestor hook.
2. Intercept the IAF waypoint and fly the approach as described in steps 1 through 5 in lesson #8. Pay special attention to the waypoint designator which appears directly over the carrier when the CVN waypoint is selected. This helps you identify the carrier among the fleet of ships in the water.
3. Carrier landings require much more precision than airfield landings. Use extra vigilance in keeping the velocity vector on the carrier deck as less room exists for error here.
4. Remember to make localizer and glide slope corrections early so you can keep the velocity vector EXACTLY on the approach end of the deck for as long as possible.
5. When you get close to the carrier you will see three *arresting cables* stretched across the deck. Ideally, your *arrestor hook* will grab onto the *third* cable and jolt you to a stop. Aim for a point BEFORE the third cable!
6. *Unlike* a ground landing, you should not flare. This just wastes valuable runway space. In carrier landings, you should literally fly right into the deck!
7. Crazy as it sounds, you should add full afterburner [\] about 1,000 feet before the carrier deck. By adding full afterburner you may prevent a disaster in the case of a *bolter.* A bolter is when your arrestor hook fails to *trap* a cable. Adding full power allows you to re-attain flight if this happens.
8. If your plane comes to a stop on the carrier deck you trapped the cable. In this case, cut the power by pressing **[~]**. When the power is at 0% retract the arrestor hook by pressing **[A]**.
9. If you want to taxi around the deck, add a small amount of power **[+]**, and use the rudder pedals to steer (**[Z]** and **[X]**).
10. If your approach misses the carrier (which even the best aviators do from time to time), restart the mission. To restart the mission, open the In-Flight menu by pressing **[Esc]**. Then select the "Game" menu and the "Restart Current Mission" option.
11. Don't get discouraged if your first landing attempt is not perfect. It may take a few tries before you get it right but with a little practice you'll be making precision landings every time.

LESSON #10: GROUND ATTACK TRAINING

Part 1 – Pre-Designated Targets

Lesson #10 teaches you to target and destroy ground objects. You will also learn to use the "Re-Arm Aircraft" function cheat.

An array of barracks has been erected as targets south of Concepcion, Chile. You will use your aircraft's Maverick targeting system to seek and destroy these barracks.

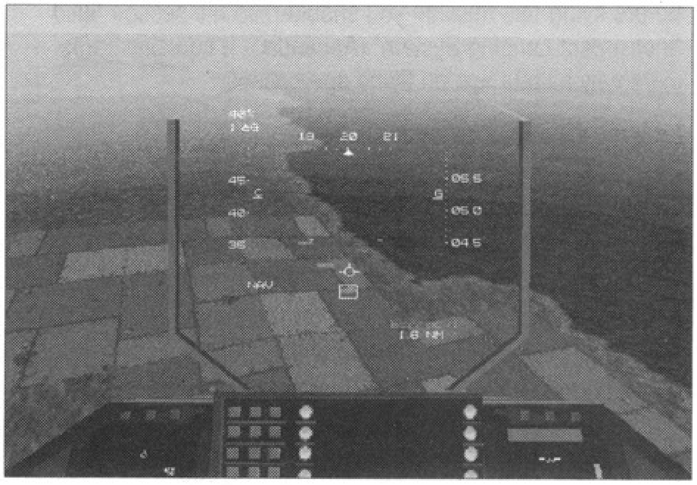
Since Maverick missiles have propulsion and guidance systems, they are often referred to as "smart missiles." Usually, they are used in conjunction with pre-designated targets. These are fixed targets like buildings or bridges. Their location is programmed into your weapons system before you leave the base or carrier. Therefore, this easy-to-use weapon is extremely accurate when used properly. The fighter pilot's task is merely to get the missile close enough to its target and fire it.

Lesson #10 quick reference keys:

KEY	FUNCTION
[Backspace]	Cycles through ATG weapons
[F7]	Right MFD: Navigation Information/ Air Targets
[T], **[Shift-T]**	Cycle through targets
[Space]	Fire Selected weapon
[F10]	Missile view
[Alt-M]	Re-Arm Aircraft (Cheat)

Completion Requirements: Destroy at least four of the nine pre-designated targets.

1. Arm a Maverick missile as your weapon by pressing **[Backspace]** until "MAV" appears near the HUD's lower left corner. Notice the quantity of Mavericks in your weapons store appears just to the right of the letters "MAV." Also, the letters "ATG" appear just under "MAV" indicating that the HUD is in Air To Ground mode.
2. Now you must locate the pre-designated targets. You already know how to do this since your navigation system recognizes pre-designated targets exactly like waypoints. We'll quickly recap how this works:
   - Press **[T]** or **[Shift-T]** until "BARRACK1" appears in the HUD's lower right corner. The HUD displays your distance from this target under the word "BARRACK1."



- The navigation director in the HUD's heading tape indicates which direction you should turn to intercept the target. Turn towards the navigation director until you see the green target designator box appear. (When this mission began the designator box appeared directly ahead of you.) Your selected target is in the center of the box. If you keep the box centered in the HUD, you will eventually reach the target. If the target lies too far below you when you initially turn toward it, the targeting box may be compressed near the bottom of the HUD or out of sight altogether.

3. Attaining proper alignment with the target is quite important. For best results, fire the missile when your target is below you, and centered in the HUD.
4. When you are 8 miles from BARRACK1, set your power to 70% **[7]** and fire the Maverick by pressing **[Spacebar]** or the joystick button.

5. You can watch the missile's flight by selecting missile view **[F10]**.
6. When you hit the target it will burst into flames. When you destroy a target the word "DESTROYED" appears in the HUD. Some targets may require several hits for destruction. If you miss, re-align your aircraft with the target and fire another Maverick.
7. Your weapons system remembers which targets you have destroyed. To review the destroyed targets, look at the "Navigation Information" MFD **[F7]**. The Navigation MFD displays the target's relative bearing and distance information in red if you already destroyed the target.
8. Now, select and align with BARRACK2 in the same way you did for BARRACK1.
9. This time, wait until you are 2 to 3 miles from the target before firing.
10. Once you fire the Maverick (by pressing the joystick button or **[Spacebar]**), select the tactical view **[F9]**. Tactical view allows you to watch from the cockpit as your missile destroys the barrack.
11. You may find it useful to hide the cockpit display panel by pressing **[P]**.
12. Press **[<]** or **[>]** to zoom in or out. **[F1]** re-centers your view.
13. Your store of Mavericks has now decreased from its capacity load of 4. If this were combat, you may wish for more ammunition. *JetFighter III* provides a "Cheat" for this contingency. First activate the "Cheat" from the In-Flight menu. Press **[ESC]**, to the "Cheats" and activate "Re-Arm Aircraft". Re-arm your aircraft by pressing **[Alt-M]**.
14. If you prefer realism, avoid the "Cheats" by landing at an airport or carrier. When you come to a complete stop on the runway, your aircraft is automatically refueled and re-armed.
15. Use your new stock of Mavericks to destroy some more barracks practicing the same method described above.
16. When you are finished with the lesson, select "Auto Land" or "Return to Carrier" from the In-Flight menu **[Esc]** under "Game." Alternatively, select the IAF waypoint and proceed to the carrier for a landing.

LESSON #11: Ground Attack Training

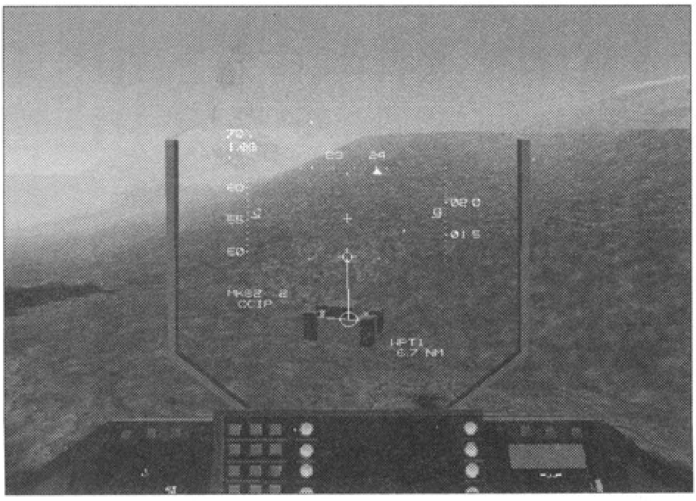
Part 2 – CCIP Bombing

Lesson #11 teaches you to target and destroy ground objects using Mark Bombs (MK bombs). When the lesson begins you will be 20 miles from WPT1 heading 185 at 2,500 feet. Your first target lies near WPT1.

This mission consists of three parts. First, you will get a "feel" for your Continuously Calculated Impact Point (CCIP) bombing system as you over-fly some hilly terrain. Second, you will use your Navigation Director to locate your first target. Third, you will use your CCIP system and MK82 bombs to destroy an array of targets that lies along the *Estuario De Reloncavi River.*

Unlike Mavericks, MK bombs lack propulsion and guidance systems, thereby classifying them as "dumb bombs." The MK comes in two sizes: 500 lb. (MK82) and 2,000 lb. (MK84).

Your aircraft is equipped with a CCIP system that helps you deliver dumb bombs. Since MK bombs lack propulsion and guidance systems, their accuracy depends exclusively on pilot skill. The CCIP system's display appears as a line extending from the HUD to the ground. The ground end on the line is called the impact point. The *impact point* identifies where the bomb would strike if you dropped it at that moment – hence the name "Continuously Calculated Impact Point." To help you better identify the impact end of the line, it appears within a pipper (a circle).



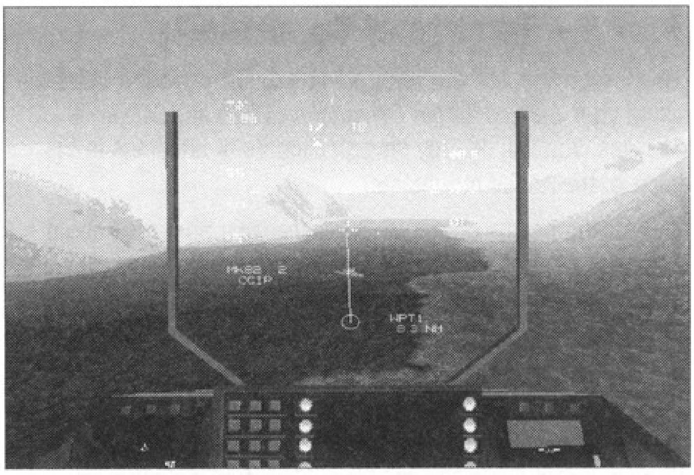
Lesson #11 quick reference keys:

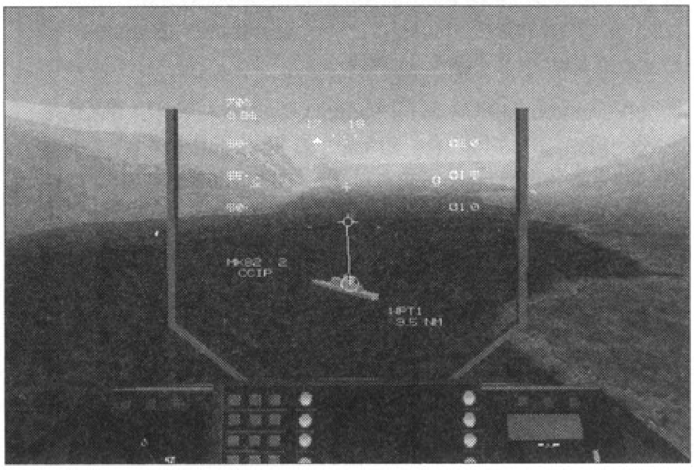
KEY	**FUNCTION**
[Backspace]	Cycles through ATG weapons
[Alt-A]	Toggle altimeter between MSL and AGL modes
[F6]	Radar MFD
[Spacebar]	Fire Selected weapon/Drop Bomb
[F10]	Missile/Bomb view
[Alt-T]	Time Compression

Completion Requirements: Destroy at least five of the targets that lie along the west bank of the *Estuario De Reloncavi River* (including at least one ship).

1. Fly toward WPT1 using the techniques described in lesson #3.
2. While enroute, arm your MK82 bombs by pressing **[Backspace]** until "MK82" appears near the HUD's lower left corner. As with other weapons, information about your MK82 bombs appears in the HUD's lower left corner. Namely, the HUD shows the type of weapon selected, quantity remaining, and targeting mode. In this case 2 MK82 bombs are loaded and the HUD is in CCIP mode.
3. *Unlike any other mission,* this lesson places you in a special bombing mode: it will be impossible to deplete your store of MK82 bombs. Therefore, you can concentrate on bombing and flying.
4. Maintain your course to waypoint 1 (heading 185°) while you practice with the CCIP system.
5. Place your altimeter in AGL mode by pressing **[Alt-A]** until "G" appears near the altitude tape.
6. Since MK bombs lack propulsion systems, their range depends exclusively on your speed, altitude and attitude. While maintaining a fixed altitude of about 1,000 feet AGL, adjust your thrust with the keyboard numbers **[1]** through **[0]**. Notice how the distance between your aircraft and the end of the targeting line varies directly with your speed. Sometimes the impact end of the line extends beyond the HUD's field of view. For example, in level flight at low airspeeds the impact point lies below the HUD's field of view. In this case, you must pitch down slightly to target a ground object.

7. You may find it useful to hide the cockpit display panel by pressing **[P]**.
8. Observe the pipper's behavior as it follows the terrain. As the pipper reaches the top of a ridge it may seem to disappear because the impact point lies on the far side of the ridge beyond your field of view.
9. Attempt to get a feel for the pipper's behavior by adjusting your pitch first up, then down.
10. Drop a few bombs by pressing the joystick button or **[Spacebar]**. Notice the bombs land exactly where the tip of the targeting line was when you released them.
11. The CCIP system is most accurate when you drop bombs from an altitude of about 1,000 feet for every mile they must travel horizontally.
12. As you practice keep an eye on your distance from WPT1. If the navigation director is not in the center of your heading tape, you have drifted off course. In this case, fly to WPT1 from wherever you are using the techniques described in lesson #3.
13. Steer towards WPT1 and check your distance in the HUD's lower right corner.
14. Set your power to 70% **[7]** and maintain an Altitude of about 1,000 feet AGL. This places the end of the targeting line well ahead of your aircraft so it appears in the HUD.
15. Begin looking for your targets as soon as possible. If you spot them early, you will have more time to align for a bomb release. If you flew directly to WPT1 from your starting point, the first target (a large building) will appear slightly to your right as you approach WPT1.
16. When you spot your target, turn directly towards it. Align with the target by placing the targeting line EXACTLY on the object.





17. Fly straight and level keeping the targeting line over the target. If necessary, fine tune your heading using the rudder, **[Z]** and **[X]**.
18. Keep your eye on the impact point at the end of the targeting line. As soon as it is EXACTLY over the target, drop a bomb by pressing **[spacebar]** or the joystick button.
19. Press **[F9]** for tactical view or **[F10]** for missile view if you want to watch the bomb fall. The target will burst into flames when you hit it.
20. If you miss the target return for another pass or continue on to the next target. An array of 15 objects lie along the river's **west** bank.
21. When you are finished with the lesson, return to the carrier by accessing the In-Flight menu **[Esc]**, pulling down the "Game" menu, and selecting "Return to Carrier." Alternatively, select the IAF waypoint and fly an approach as in lesson #9.

LESSON #12: Ground Attack Training

Part 3 – Targets of Opportunity

This lesson teaches you to target and destroy ground objects using your *Manual Target Designator* (MTD) and Maverick Missiles. You will destroy several clusters of buildings in the heart of the Andes mountains.

This lesson begins on the UNS Peacekeeper anchored about 6.5 miles west of your target city. You may use your navigation director or radar to help you find your targets. The targets lie under WPT1.

Your (MTD) is designed for **targets of opportunity** – targets the pilot must locate because they are not preprogrammed into his navigation system. In using this system, you actually program a target's location into the missile's navigation system. Once fired, a smart missile locks onto the target and navigates towards it with pinpoint accuracy.

When you activate the MTD system, by pressing **[Shift-D]**, a large green cross-hair (+) appears in the middle of your screen. This is the Target Designator (TD). Designate targets by placing the TD over the object you wish to destroy and pressing **[D]**.

Lesson #12 quick reference keys:

KEY	**FUNCTION**
[Backspace]	Cycles through ATG weapons
[Shift-D]	Toggle Laser Targeting System on/off
[D]	Designate a Laser Target
[Space]	Fire Selected weapon
[<], and **[>]**	Zoom in and out

Completion Requirements: Destroy at least eight of the ground targets that lie under WPT1.

1. Before takeoff, configure your aircraft for the attack:
   - First, select a Maverick missile by pressing **[Backspace]** until you see "MAV" appear near the HUD's lower left corner. You are carrying 4 Mavericks.
   - Second, enable the ATG targeting system by pressing **[Shift-D]** ("D" for "Designate").
   - Press **[N]** until "WPT1" appears in the HUD's lower right corner.
2. Now you are ready for takeoff. Press **[\]** for full power and head toward WPT1 at about 800 feet AGL. (See lessons 3 and 6 if you don't know how to do this.)
3. When you reach 800 feet, reduce power to 50% thrust by pressing **[5]**. This slows you down and allows more time for aiming.
4. *Unlike any other mission*, this lesson places you in a special attack mode: you will be unable to deplete your store of Mavericks. Therefore, you can focus on learning to use the laser targeting system.
5. The virtual cockpit may obscure your view of ground targets. Hide the cockpit from view by pressing **[P]** .
6. Designate your target as soon as you establish visual contact with it. Simply adjust your view until the TD is EXACTLY on your target.
7. The zoom control can be extremely helpful during target designation, especially if you are far from your target. Once you adjust your view to encompass the target, zoom in on it by pressing **[>]** several times. This facilitates a more precise target designation.
8. When the TD is directly on a target, press **[D]** to designate the target. The TD will momentarily turn red indicating a successful lock. If you change your mind, press **[D]** again to designate a new target.
9. Return to a forward view by pressing **[F1]** or tapping joystick button #2.
10. Now, any Maverick you fire will seek the designated location. However, this does not assure a hit. For best results, fire when the target lies (roughly) ahead of you.
11. To align with the target, turn your aircraft toward the red triangle in the heading tape. This triangle is called the target director. The *target director* is similar to the navigation director (which appears as a green triangle) that you use for waypoint navigation. As the target director centers, a green target *designator diamond* appears in the HUD. The center of this diamond identifies the target point.
12. Once you see the diamond, fire a Maverick by pressing **[Spacebar]** or the joystick's fire button.

13. Two factors may cause the missile to miss the target:

    - Improper alignment before missile release.
    - Faulty target designation.

    If you miss, either re-align or re-designate the target and fire another Maverick.

14. Practice several bombing passes on this town. Practice high and low altitude bomb runs.

15. If you would like a real challenge, precede to waypoint 2 for another cluster of targets. These targets lie atop, and somewhat guarded by, a mountain peak. Furthermore, the targets near waypoint 2 are smaller than those near waypoint 1.

16. When you are finished with this lesson, press **[Esc]** to access the In-Flight menu. Then select the "Game" pull-down menu and the "Return to Carrier" option. Alternatively, you can select the IAF waypoint and return to the carrier for a landing.

LESSON #13: Air Combat Maneuvering

This lesson introduces both offensive and defensive aspects of dog fights and ground attack missions. Additionally, you can practice most of the skills you have learned in lessons 1 through 12.

This lesson begins at 9,300 feet MSL near *The Golfo De Ancud.* Your primary target is a large building located 10 miles southeast of your starting position. Your secondary target, an enemy MiG-29, guards this building from the skies above.

In addition to the enemy aircraft, several Surface-to-Air Missile (SAM) and Anti Aircraft Artillery (AAA) sites guard this building from the ground. SAM sites launch missiles and AAA sites fire explosive artillery shells.

The AAA units will begin firing as you near the ground target. The explosions and black clouds you see are called *flack.* Although these explosions may damage your aircraft, only a direct hit will render it inoperable.

Heat seeking and radar missile locks represent a more serious threat. Your weapons system warns you when a missile locks onto your aircraft. It sounds a warning horn and displays the message "WARNING: HEAT-SEEK/RADAR-HOME MISSILE" in your communications message panel.

A missile lock does not predict imminent destruction; several defensive options exist. You can:

- Out-maneuver the missile.
- Deploy Chaff Charges to disorient Radar Guided (RG) missiles.
- Activate your Electronic Countermeasure (ECM) Jammer to confuse RG missiles.
- Deploy Flares to disorient heat-seeking missiles.

Chaff charges confuse radar guided missiles by dispensing thousands of radar reflective metal scraps that missiles confuse for your airplane.

Your ECM Jammer emits microwaves that distort/confuse enemy radarscopes.

Flares disorient heat seeking missiles by producing an intense ball of heat that missiles may prefer over your aircraft's exhaust.

Defensive countermeasures weigh much less than bombs and missiles. You can usually carry as many as 30 flares and 30 chaff charges – so use them liberally! If a missile is fired at you and you're not sure which countermeasure to deploy, use both!

Here are a few general tips to help you evade missiles:

- Out-endure distant missiles by forcing them to approach you from the side – thereby enticing the missile to waste fuel turning.
- Use low-G turns while keeping the missile to your side.
- When the missile is about 2,000 feet away, dispense several countermeasures while sharply turning toward the missile.

Lesson #13 quick reference keys:

KEY	**FUNCTION**
[Backspace]	Cycles through ATG weapons
[Enter]	ATA mode (and cycle through ATA weapons)
[Alt-R]	Toggles on-screen radar on/off
[Ctrl-R]	Enables the radar's "Auto Range" feature
[R]	Cycles through radar ranges
[;]	IFF Discriminator – Cycles through target selection modes: All/Hostile/Friendly
[T], **[Shift-T]**	Cycles through pre-designated targets
[C]	Deploy a chaff charge (defensive countermeasure)
[J]	Activate your ECM Jammer
[F]	Deploy a flare (defensive countermeasure)

Completion Requirements: Destroy the pre-designated ground target (BUILIDING) and the hostile aircraft that guards it.

1. Enable your on-screen radar by pressing **[Alt-R]** (if it isn't already on).
2. Head toward the BUILDING in the valley ahead. It will be easy to find since it is a pre-designated target:
    - Select Air to Ground mode on the HUD by pressing **[Backspace]** until "ATG" appears near the HUD's lower left corner.
    - Press **[T]** until "BUILDING" appears in the HUD's lower right corner (if it isn't already there).
    - Steer toward the navigation director in the heading tape. As you approach the correct heading the targeting designator box will appear in the center of the HUD. The box represents your target so simply fly towards it.
3. Almost immediately, your radar system will identify the hostile aircraft guarding the building. The radar system conveys this information to you via the communications message panel (located just below the HUD).
4. Target and destroy both the aircraft and ground target in any order you choose.
5. Use the procedures described in lessons 10-12 to destroy the ground target. It is important to realize you can destroy the target with either the CCIP, MTD, or Pre-Designated targeting systems. However, the Pre-Designated targeting system allows you to fire a missile from much further away than the other two. In general, the pre-designated targeting method is the safest, fastest, and easiest system to use.
6. Destroy the aircraft using the techniques described in lesson #5. However, this time won't be as easy since your target wants to destroy you also!
7. To complicate the situation, you must differentiate between the enemy target and the friendly AWACS aircraft in the area. Three safeguards reduce the possibility of accidentally killing friendly aircraft:
    - The title in the HUD's lower right corner distinguishes between enemies and allies: enemy and ally targets correspond to red and green titles respectively.
    - A large green "X" appears over the target designator box when friendlies are targeted.
    - Your "Identify Friend or Foe Discriminator" (IFF) can disallow weapon locks on friendly aircraft. Switch your IFF discriminator to "Hostile Only" mode by pressing **[;]** until "H" appears in the bottom of the HUD.
8. Your weapons and radar systems do most of the work locating the enemy, so your most demanding task will be to maneuver yourself into firing position. Ideally, you should maneuver into position behind the enemy. From this location, gunning is easier and missiles are most effective. For a detailed discussion of combat maneuvers see the "Pilots Notes" chapter.
9. When the enemy fires upon you, your communications display window informs you what type of weapon he fired.
10. Locate the missile as soon as possible using the following methods:
    - Check your on-screen radar. Missiles appear as white dots. Press **[R]** to adjust the radar's range if you don't see any white dots.
    - Check your map view by pressing **[M]**. Here they appear as red arrows.
    - Visually identify missiles. For visual identification use the preset "snap" views (**[F1]** through **[F4]**) or look around with the Numpad keys (**[Numpad 7]**, **[Numpad 9]**, **[Numpad 3]**, and **[Numpad Del]**).
11. Check your communications display window (located below the HUD). If the missile is radar guided, press **[J]** once and **[C]** several times to jam the weapons radar and deploy some chaff charges.
12. If a heat-seeking missile locks onto your aircraft, press **[F]** several times to deploy some flares.
13. After you destroy both targets, precede toward the IAF waypoint and land on the carrier.

14 Fly this mission several times. Use different weapons on the targets each time. After you've flown this mission a few times, increase the targeting difficulty if you're looking for a challenge. This makes gunning down enemy targets more difficult. Do this by pressing **[Esc]** to access the In-Flight menu. Then select the "Cheats" pull down menu and the option "Targeting Difficulty."

CONCLUSION

Congratulations!!

You have completed all thirteen training lessons and are now ready for active duty. If you flew these missions as a campaign your next mission will be the first of a new campaign.

You will be assigned to the UNS Peacekeeper which will be stationed near Cuba. Your squadron will ally with other UN forces to crush a Cuban drug smuggling operation.

SIMULATION REFERENCE

If you have not done so yet, please read the Procedures chapter first.

This reference section contains the most important information on flying and fighting in JetFighter III. It explains the navigational controls, combat controls, cockpit and viewing systems.

If you are familiar with other flight simulators, first read the chapter titled Procedures. It will quickly instruct you to perform common tasks in JetFighter III, such as engaging a target or using the ILS landing system. This reference section is laid out as a basic reference to use when you need more detailed information.

CONTROLS

There are two kinds of devices which you can use in JetFighter III: the keyboard and a joystick. Although we recommend using a joystick to enjoy the game's realism, you can operate the program entirely from the keyboard. This section discusses how to operate the program with a keyboard or joystick.

JOYSTICK

Like a real pilot, you can use a stick to maneuver your airplane in JF3. Your joystick will operate just like they do in an actual fighter. If you pull back on the stick, the plane will go up; if you pull left on the stick, the plane will roll to the left.

Note: For information on how to install a joystick and its game cards, please consult their manufacturer's instructions.

However, before you can use a joystick, it must be properly installed and calibrated. To activate the joystick, hit the **[Esc]** key when you are airborne. This will bring up the In-Flight Menu. (For more information, see In-Flight Menu on page X). Next, type **[J]** to start the joystick submenu. Use the directional ("cursor") keys to select "Joystick On." When you are finished, type **[J]** again. This will begin recalibration. Simply follow the screen's directions and select "Resume Flight." when you are finished.

KEYBOARD

The keyboard is your main way for you to navigate your plane. In general, pressing a key on the keyboard can do one of three different things. It will:

- begin or end an action (i.e., lower landing gear);
- cycle through available options (i.e., change displays); or
- make a decision (i.e., fire a weapon).

Occasionally there are some special commands that JetFighter III will want to "confirm" before executing. For these commands, the program requires that you hold down the "Shift" or "Ctrl" key along with the key (for example, **[Ctrl-C]** exits to DOS). JF3 uses this combination of keystrokes to make sure an action is not accidentally performed.

FLIGHT CONTROLS

The flight controls are used to maneuver the aircraft in the air and on the ground. All the flight controls can be operated from the keyboard but if you have a joystick, throttle control, and rudder pedals, controlling the aircraft will feel natural and be more intuitive.

DIRECTIONAL CONTROLS

The numeric key pad (or "Numpad") arrows enable you to change the direction of your plane in flight. These keys allow you to pitch the airplane up and down, roll it right or left, and yaw it to either side. Some keyboards have separate cursor arrow key pads. These keys should work just like the Numpad arrow keys.

PITCH UP (CLIMB) — [NUMPAD 2]

When airborne press the **[Numpad 2]** key to pitch the aircraft's nose up. This is exactly what would happen if you pulled backward on the plane's stick. To perform an "Upward Vertical Loop" hold down the **[Numpad 2]** key until you have completed a full circle.

PITCH DOWN (DIVE) — [NUMPAD 8]

When airborne press the **[Numpad 8]** key to pitch your aircraft's nose down. This is analogous to pushing forward on the plane's stick. To perform a "Downward Vertical Loop" continue to press the **[Numpad 8]** key until your plane has completed a full circle.

ROLL RIGHT — [NUMPAD 6]

When airborne press the **[Numpad 6]** key to roll the aircraft right. This is exactly what would happen if you pushed the airplane's stick to the right. To perform a "Right Roll" continue to hold down the **[Numpad 6]** key until your plane has finished a complete roll. When the aircraft is on the ground, **[Numpad 6]** will steer right.

ROLL LEFT — [NUMPAD 4]

When airborne press the **[Numpad 4]** key to roll the aircraft left. This is exactly what would happen if you pushed the airplane's stick to the left. To perform a "Left Roll" continue to hold down the **[Numpad 4]** key until your plane has finished a complete roll. When the aircraft is on the ground, **[Numpad 4]** will steer left just like a car.

YAW RIGHT — [NUMPAD ENTER]

When airborne press the **[Numpad Enter]** key to turn or "yaw" the plane to the right. This is exactly what would happen if you pushed down the plane's right rudder pedal. To continue turning the plane right, hold down the **[Numpad Enter]** key. If you continue depressing the key, the plane will fly to the right in a full circle. For convenient two-handed operation the **[X]** key performs the same function. When the aircraft is on the ground **[Numpad Enter]** or **[X]** will steer right just like a car.

YAW LEFT — [NUMPAD INS]

When airborne press the **[Numpad Ins]** key to turn or "yaw" the plane left. This is exactly what would happen if you were pushing down on the plane's left rudder pedal. To continue turning your plane left, hold down the **[Numpad Ins]** key. If you continue depressing the key, your plane will fly to the left in a full circle.

For convenient two-handed operation the **[Z]** key performs the same function. When the aircraft is on the ground, **[Numpad Ins]** or **[Z]** will steer left just like a car.

Note: *New users often confuse roll and yaw. Just remember that a roll is like tilting your head while yaw is like turning your head right or left.*

ENGINE CONTROLS

JetFighter III uses very simple engine and throttle controls. The row of number keys near the top of your keyboard controls the engine and throttle. (Don't confuse the number keys with the function keys.) Some computer stores carry a throttle control device for use with flight simulators. If you have a separate throttle control, you can use it instead of the keyboard to control the aircraft's engine.

THROTTLE SETTINGS

In the military, a jet aircraft's throttle setting is referred to as a percentage of total Military (non-afterburner) power. That is, when the engine is at maximum power with the afterburners off, it is said to be at 100% Military Thrust. The number keys in JF3 enable you to set your engines at a specific percent of military power. This chart shows how simple it is:

[1] = 10% of full military power
[2] = 20% of full military power
[3] = 30% of full military power
[4] = 40% of full military power
[5] = 50% of full military power
[6] = 60% of full military power
[7] = 70% of full military power
[8] = 80% of full military power
[9] = 90% of full military power
[0] = 100% of full military power

THROTTLE ADJUSTMENTS — [-] & [+]

For fine control over engine power, use the **[+]** and **[-]** keys on the top of the keyboard. These keys enable you to slowly add **[+]** or remove **[-]** power in 1% increments. Hold these keys continuously to gradually increase or decrease power.

Note: *It is not necessary to hold the shift key in combination with the* **[+/=]** *key. Simply pressing the* **[+/=]** *key will perform the* **[+]** *function in JF3.*

AFTERBURNERS — [+]

In a tough dogfight, an extra burst of speed may be essential. Modern fighters use afterburners to accomplish this task. When activated, afterburners ignite raw fuel in the plane's hot exhaust. The resulting thrust is powerful, but costly. At full afterburner, the F-22 consumes an amazing 860 pounds of fuel per minute! To help conserve the fuel and adjust your speed, your plane comes with a "5 stage" afterburner. Each stage is more powerful and uses more fuel than the previous.

To activate the afterburners, you must already be at 100% military power and then press **[+]**. For example, if you are at 70% and want to activate afterburners, press **[0]**, wait for the engines to spool up to 100% power, then press **[+]** to turn on the first stage afterburner or "AB1". To activate other afterburner levels, press **[+]** or [-]. Remember, the higher levels of afterburner consume more fuel. To turn the afterburners off, press **[0]** and your engines will return to 100% military power.

FULL AFTERBURNER — [\ ]

In JetFighter III there is a quick and easy way to get to full afterburner. Press **[\]** and your engines will automatically spool up to 100% military thrust, then cycle into stage 5 afterburner. You may find this control useful to make a quick escape from a particularly nasty furball!

ENGINES OFF — [~]

You can turn your engines off by pressing **[~]**. Pressing any throttle key **[1]** - **[0]**, **[+]** or **[\]** will automatically re-start your engines and bring them up to the requested thrust setting.

OTHER CONTROLS

Several other controls affect the function of your aircraft.

AIR BRAKE — [B]

The air brake is used to rapidly slow the aircraft while flying. To apply the brake, press the **[B]** key. The plane will immediately begin decelerating. On most aircraft, the brake opens a panel into the airstream causing more "drag". Drag slows the plane. If you're flying the F/A-18, try an external view to watch the brake extend and retract. Pressing **[B]** again will retract the air brake.

Note: *Using the brake may make your aircraft more difficult to control, so be sure to retract the brake when it is no longer needed.*

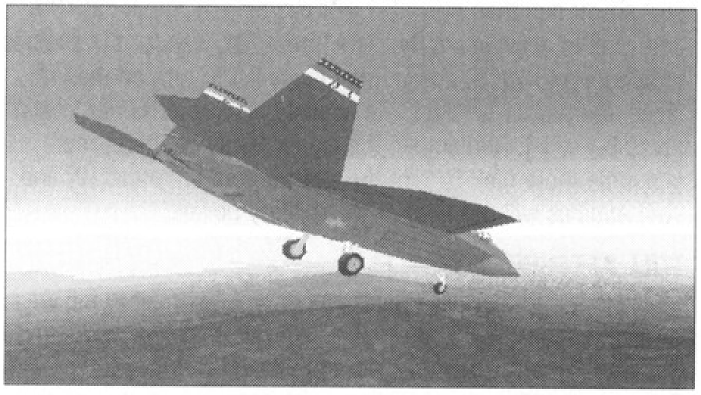
WHEEL BRAKE — [B]

On the ground, pressing the **[B]** key applies the wheel brake. The wheel brake works just like the brake in a car. Be careful, the wheel brake is inoperable at high speeds and you must instead reduce your thrust to slow down.

Note: *If the wheel brake is activated you must release it to enable the plane to take off! Also, don't use the wheel brake for carrier landings! Let the arrestor cables do the work.*

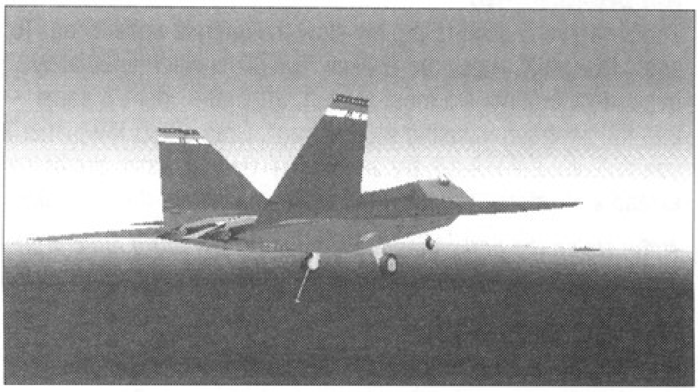
LANDING GEAR — [G]

The plane's landing gear consists of three wheels placed beneath the aircraft in a triangular pattern. Fully retractable and deployable, the landing gear is concealed in a cavity within the plane's belly. After take-off, retract your landing gear by pressing **[G]**. Likewise, extend the gear for a landing by pressing **[G]**.



ARRESTOR HOOK — [A]

Landing on an aircraft carrier demands an aircraft traveling at over 100 MPH to come to a dead stop on just a couple hundred feet of runway. To do so, the planes are "trapped" by the aircraft carrier's arrestor cables. A plane performs a trap by lowering its arrestor hook and successfully catching one of three cables strung across the flight deck. The "trapped" cable then pulls the plane to a stop. Deploy the arrestor hook for a carrier landing by pressing **[A]**. If you abort your landing attempt, press **[A]** again to raise the hook.



EJECT — [CTRL-E]

Although the UNRDF dislikes losing any fighter aircraft, it would rather lose a plane than a pilot. As a result every fighter is equipped with a sophisticated ejection seat designed to throw the pilot free from a damaged aircraft. The seat includes emergency oxygen, a recovery parachute, an FLCS data recorder, a survival kit, and a radio beacon. The ejection process begins when you press **[Ctrl-E]**. Explosive charges under the seat throw the seat (with the pilot) clear of the airplane. This is followed by a rocket burst, seat separation, and full deployment of the parachute — all in less than six seconds! Some pilots have claimed to be two inches shorter after an ejection!

TIME COMPRESSION — [Alt-T]

Some missions require you to fly several hundred miles. If you want to speed up the cross-country flight and get right to the action use JetFighter III's Time Compression feature.

The time compression feature enables control over the rate at which the simulated "world" operates. Use the in-flight menu or press **[Alt-T]** to toggle through the three speed selections. The default time compression setting is 1:1 or "real time". Press **[Alt-T]** once to make the simulator run at twice the speed or 2:1. Press **[Alt-T]** again to speed the simulator up to 3:1. Toggle **[Alt-T]** one more time to disable time compression and run the simulator in real time.

Naturally, time compression enables you to cover a distance in one half or one third the time but it has drawbacks requiring careful use. When time compression is activated EVERYTHING in the simulator will operate faster than the normal speed but your brain will still be working in real time. Until you become accustomed to the problems this can cause use time compression only when flying very high above the terrain.

Note: *Time compression will automatically be deactivated if your radar identifies a hostile.*

LANDSCAPE TRAVERSAL MODE — [Alt-S]

Landscape Traversal Mode was implimented to provided a way to move from one location to another at eight times the current "real time" speed of the aircraft.

This mode differs from Time Compression because only your plane is moving faster. The simulated world still functions in real time. Additionally your altitude above sea-level is locked to the altitude you were flying when landscape traversal mode was activated. Extreme caution must be exercised when using this mode or you will soon find yourself flying into the side of a mountain. It is best to activate landscape traversal mode only when high above the terrain.

Note: *This feature is not available when you fly a campaign.*

THE INSTRUMENT PANEL

COMMUNICATIONS MESSAGE PANEL

Occasionally the plane's onboard computer will send you a status message. These messages are displayed on the message panel located at the top center of your cockpit control panel, directly beneath the HUD. Messages are usually one or two word reports such as "Danger: Collision." Longer messages from nonplayer characters are displayed at the top of your computer screen.

ATTITUDE INDICATOR

The attitude indicator continuously displays your orientation relative to the ground. Often refered to as the "artificial horizon" indicator, this guage will help you remain oriented when you have few visual cues to rely on. In clouds, dense fog, or at night it is easy lose track of which way is up. You may feel as though you are right-side up when you are actually upside down. Frequently check the attitude indicator if you are not 100% certain you see ground beneath you and sky above. Trust your instruments!

Reading the attitude indicator is simple. The blue portion represents sky, the brown portion represents ground, and a small white icon in the center represents your plane. When flying level to the ground and right-side up the indicator will display sky above and ground below. When flying level to the ground and upside-down the indicator will display ground above and sky below. If you fly directly up the indicator will display all sky and if you fly straight down the indicator will display all ground.

FUEL GUAGE

The fuel guage continuously displays the amount of fuel remaining in the aircraft just like the fuel guage in a car. You will find the fuel guage in the F-22N located in the far right side of the cockpit control panel. The green bar represents the amount of fuel remaining.

MULTI-FUNCTION DISPLAYS (MFD)

DEFENSIVE DISPLAY — [F5]

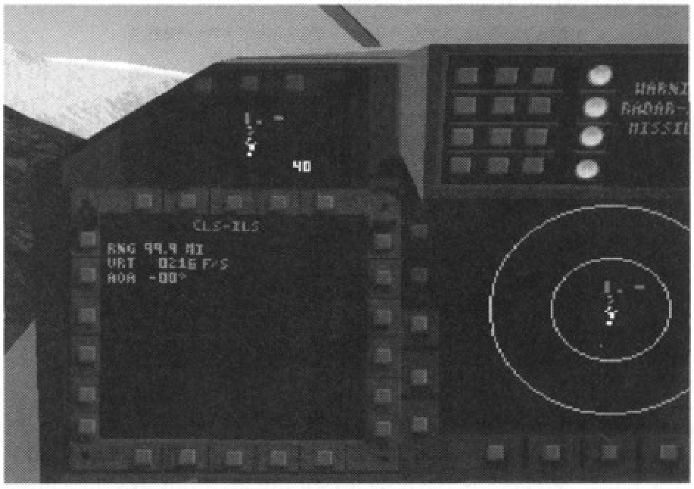
The Defensive Display has two modes, Flight Information and ILS/CLS. You can toggle between modes by pressing **[F5]**.

FLIGHT INFORMATION MODE

Flight information mode relays current information concerning the aircraft's altitude, speed, heading, and the time of day. Also reported are your current latitude and longitude in degrees, minutes and seconds.

INSTRUMENT/CARRIER LANDING SYSTEM

This mode of the Defensive Display presents information on the instrument and carrier landing system (known as "ILS" and "CLS" respectively). Like the graphical displays in the HUD, this data is designed to make landings safer and easier. This screen tells you three valuable facts about your approach: (1) your range to runway, (2) change in altitude, and (3)angle of attack.



```
CLS-ILS
RNG 99.9 MI
VRT  0216 F/S
AOA -00°
```

The range to the authorized runway is shown in the monitor next to "RNG." This distance is displayed in nautical miles Beneath it is the plane's vertical descent (or "VRT") in feet per second (or "F/S"). This number tells you how fast the aircraft is descending. The third number is the angle of attack or "AOA". This guide represents the wing's position relative to the direction of the wind. To illustrate this concept, consider the following example. If a plane is flying directly against the wind, its AOA is 0°.

Wind → ← Plane = 0° AOA

But, when the pilot pulls back on the stick, the air continues to flow horizontally for a few seconds even though the wing is angled upward. This results in a positive AOA.

Wind → ↖ Plane = 15° AOA

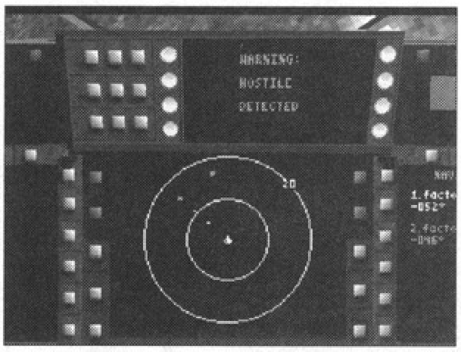
After a few seconds of flight, the airflow will realign itself with the new angle of the wing. Once again the airflow is directly against the wing. The plane is then said to have regained a zero degree AOA.

Wind ↘ ↖ Plane = 0° AOA

During a landing, you should try to obtain an 8° angle of attack. This is angle is important because you want the rear wheels to touch down before the nose. It is best achieved by pulling back slightly on the stick just before landing.

HORIZONTAL SITUATION DISPLAY — [F6]

The screen in the middle of the instrument panel is the Horizontal Situation Display (or "HSD"). It is a highly sensitive integrated radar system that enables you find and track targets in a 360° view. It combines the advantages of a traditional radar with radar-warning receivers, global positioning systems and AWACS links. Always active, the Horizontal Situation Display can be viewed by pressing **[F6]**.



The radar screen is dominated by a large circle with an "aircraft symbo" in its center. The white "T" represents your plane and the circle depicts the radar's current range. If, for example, the range is set at "10," then the circle represents a ten mile radius around the plane. Any target located within this radius will appear on the radar. The radar's default range is "40." To change the range, press **[R]** and **[Shift-R]**. This allows you to choose from ranges of 160, 80, 40, 20, 10, 5, 2 or 1 mile. If you have AUTORANGE enabled, the computer will automatically select the radar range that keeps your target within that radius.

Note: *You probably should use a range of either "2" or "1" during a dogfight.*

If a target is within the range you have selected, it will appear as a dot or "blip." The blip's position in the radar corresponds to its position in space. For example, a blip at the top of the radar means that the target is directly ahead of the plane (or "twelve o-clock"). Likewise, a blip on the left side of the radar means that the target is directly to the left of the plane (or "nine o'clock").

The color and size of the dots also provide information about the target. Each color designates different kinds of objects. The colors stand for:

Red = enemy
Green = friendly
Gray = unidentified
White = missile
Brown = navy craft (such as a carrier)

The size variations also tell you where a target is located relative to your position. For instance, a large dot (or "●") indicates that the target has a higher altitude, whereas a smaller dot (or "•") means that the target is below you.

To choose a target for combat, cycle through the dots by pressing **[T]** and **[Shift-T]**. The currently selected target will appear encircled and its status will be displayed in the lower left-hand corner. Once chosen, the radar will track this target in the HUD with the large green target designator box. (For more information, see Target Designator on Chapter).

The tracking computer will then identify the target and show its posture (friendly is green and enemy is red). The target's current altitude (in feet), speed (in knots), and heading (in degrees) are also reported.

Note: *The HSD is duplicated in the On Screen Radar for convenience.*

OFFENSIVE DISPLAY — [F7]

The Offensive Display has two modes: Navigational Info and Air Target. To activate any system, press **[F7]** until that heading appears in the top of the screen. Each of these systems are discussed below.

NAVIGATIONAL INFO

This mode displays the mission's "waypoint" list. Waypoints can be thought of as a series of check points over which you must fly. Waypoints can also represent ground targets or your aircraft carrier. Your orders will instruct you as to your duties at each point.

The waypoints are listed in the order they should be followed. Each position has a name, heading, and distance. To cycle through the waypoints, press **[N]** and **[Shift-N]**. The currently selected waypoint will be a brighter green color than the rest of the list. Ground targets that have been designated as waypoints will be red. The names frequently use abbreviations

WPT1	First waypoint
WPT2	Second waypoint
IAF	Initial Approach Fix
FAF	Final Approach Fix
CVN	Aircraft Carrier (Nuclear)

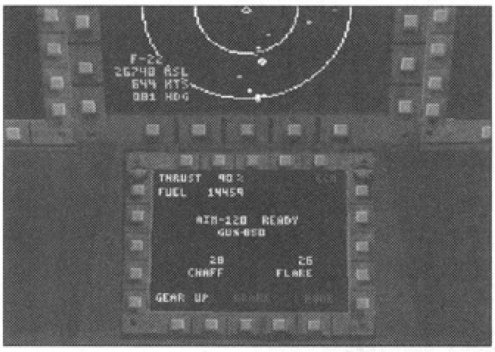
For example, the third waypoint says "IAF - 177° - 4.0 nm." This means that after you have gone to the second waypoint you should fly to the Initial Approach Fix to prepare for final approach. The Initial Approach Fix is located 4 nautical miles away at a heading of 177 degrees. After that point, you should fly to the final approach fix (FAF) and then land at the carrier (CVN).

AIR TARGET

Information about the currently selected air target is also displayed in the Offensive Display. To cycle through available air targets, press **[T]** and **[Shift-T]**. Once a target is selected, its status is shown in this screen. The tracking computer will then identify the target and show its posture (friendly is green and enemy is red). The target's current altitude (in feet), MSL speed (in knots), and heading (in degrees) are also reported.

SYSTEMS DISPLAY — [F8]

The bottom screen is called the System Display. It is where you receive critical systems and weapons information. This display contains data on several systems, including Thrust, Fuel, ECM, Weapons, Countermeasures, Gear, Brake, and Hook.



THRUST INDICATOR

This indicator show the aircraft's current thrust setting as a percent of full military thrust. You can change the engines' setting by pressing any of the number keys (i.e., "6" is 60% of full military thrust). It will also show when the engines have engaged their afterburners. This is displayed as AB1 through AB5.

FUEL GAUGE

The fuel gauge shows how many pounds of fuel remain.

ECM JAMMING — [J]

Modern jetfighters come equipped with sophisticated electronic countermeasure systems. These systems send out electronic signals to "jam" or confuse incoming missiles. Electronic countermeasures can be turned on and off by pressing the **[J]** key. When activated, the "ECM" light will appear on the screen.

WEAPONS – ATA: [Enter] & ATG: [Backspace]

This indicator in the middle of the display show which weapons are armed. In this example, the Sidewinders have been armed and are ready to fire. To select an Air-to-Air weapon, press **[Enter]** or **[Shift-Enter]**. This will scroll the display through the choices. To select an Air-to-Ground weapon, press **[Backspace]**. When you selected the weapon you want, press **[Spacebar]** to fire.

COUNTERMEASURES — [C] & [F]

Although ECM can be effective against some weapons, experience has shown flares and chaff are more effective countermeasures. Their stores are tracked on this screen. You can fire chaff or flares by pressing **[C]** and **[F]** respectively.

LANDING GEAR — [G]

As a rule, landing gear should always be raised during flight and lowered for a landing. However, it is impossible to see the landing gear when you are sitting inside a plane. This display includes a warning light to tell you when the gear is up or down. To raise or lower the landing gear, press **[G]**.

SPEED BRAKE — [B]

The speed brake allows you to rapidly slow down your airplane. To activate or release the brake, press the **[B]** key. When the speed brake is activated, the word "BRAKE" will appear in the bottom of the screen in red.

ARRESTOR HOOK — [A]

Carrier landings require the plane's arrestor hook to catch a cable strung across the flight deck. However, it is impossible to see the arrestor hook when you are sitting inside the plane. This display includes a warning light to tell you when the hook is deployed. When the hook is down, the word "HOOK" will appear in the bottom of the screen in red. To deploy or retract the arrestor hook, press **[A]**.

THE HEADS UP DISPLAY (HUD)

In the heat of battle disorientation is as much your enemy as the bandit shooting at you. At fighting speeds you can travel miles in the time it takes to check a couple instruments. During manuevers the world can look completely different from instant to instant and reorienting yourself to your surroundings can cost precious time. The Head Up Display was created to enable a pilot to keep his eyes on the action and at the same time receive crucial information provided by instrumentation.

The head up display is a diagonally mounted piece of glass with control information projected upon it. In practice it provides the pilot an enormous wealth of information without looking down at the instruments.

HUD Brightness Control **[H]** or **[shft-H]**The brightness of the HUD is controllable for different environments. During the day the display may be difficult to see against the terrain unless it is set to one of its brightest settings. Conversely, dim the hud while flying at night to keep your eyes sensitive to the dark terrain.

ON-SCREEN RADAR

While not actually part of the HUD the on-screen radar is provided for the JetFighter III pilot who does not wish to repeatedly look down to check the horizontal situation display. The on-screen radar operates exactly like the horizontal situation display utilizing all the same control functions. See the instructions for the horizontal situation display in this reference section to understand radar operational functions.

Toggle activation of the on-screen radar by pressing **[ALT-R]**.

HUD Operation Mode Indicator

The HUD operates in multiple modes which are automatically activated when the appropriate system is engaged. The operation mode indicator can be found at the lower left corner of the hud.

NAV mode is the default hud mode. If no weapons are armed, Navigation Mode is active.

LCOS mode is activated automatically when guns have been armed. The hud targeting systems operate in Air-to-Air Targeting mode for guns. LCOS stands for Lead Computing Optional Sight.

ATA mode is activated when Air-to-Air missiles have been armed. The hud targeting systems operate in Air-to-Air Targeting mode for AMRAAM and Sidewinder missiles.

ATG mode is activated when Air-to-Ground missiles are armed. The hud targeting systems operate in Air-to-Ground Targeting mode for Maverick missiles.

CCIP mode is activated when bombs have been armed. The hud targeting systems operate in Continuously-Calculated-Impact-Point mode for Mk82 and Mk84bombs.

WEAPONS STATUS INDICATOR

The Weapons Status Indicator can be found displayed at the lower left corner of the hud, just above the HUD Operation Mode Indicator. The weapons status indicator shows which weapon type is currently armed and quantity of that weapon available.

The display uses abbreviations to indicate the different weapons:

GUN = M61-A1 Vulcan six-barrel 20mm Cannon
S/W = AIM-9 Sidewinder missile
AM = AIM-120 AMRAAM missile
MAV = Maverick Missile
Mk84 = 2,000 lb. bombs
Mk82 = 500 lb. bombs

G Load Indicator

The standard measure of gravity is determined by its effect on objects at sea level on Earth. At sea level the force of gravity is said to be 1 G (pronounced "gee"). Forces produced by acceleration behave similar to gravity and are also measured in Gs.

If a plane performs a rapid banking turn centrifugal force acts upon the plane and pilot creating what feels like gravitational pull from outside the turn. That G force can cause a great deal of problems. If the G force is strong toward the bottom of the plane the pilots blood will be pulled away from his head causing him to lose consciousness. If the G force is too strong it will wrench the plane apart.

Because of the potential danger G forces present, the pilot must remain aware of the load he is subjecting himself and his aircraft to. The G Load Indicator takes the guess work out of this awareness.

THRUST INDICATOR

The thrust indicator display is found in the top left corner of the HUD. This number is a percentage of full Military Thrust. This will also display the 5 stages of afterburner, AB 1-5.

HEADING INDICATOR

The heading indicator is found running horizontally across the top of the hud. Your "heading" is simply the compass direction you are headed. Instead of saying north, east, south, and west the heading is measured in the three hundred and sixty degrees of a circle. Zero degrees is due north, ninety degrees is due east, one hundred eighty degrees is due south, and two hundred seventy degrees is due west.

The heading indicator or "tape" found running horizontally across the top of the hud displays tens of degrees. In other words, looking at the heading tape and seeing the number 18 means you are flying at a 180 degree heading or due south. If the tape reads 03 you are flying at a 30 degree heading or "a little east of due north but not quite exactly north-east".

GEAR, HOOK, BRAKE INDICATORS

The landing gear, arrestor hook, and air-brake can not be seen from within the cockpit. The hud displays which, if any, are activated by displaying the word GEAR if your landing gear is deployed, HOOK if your arrestor hook is deployed, and BRAKE if your air-brake is activated. If an individual indicator is not displayed on the hud that device is not deployed or activated.

ALTITUDE INDICATOR

The altitude indicator or "tape" runs vertically along the right side of the hud. Altitude is displayed in thousands of feet. So an altitude reading of 4.5 means 4500 feet.

Altitude can be measured as height Above Ground Level (AGL) which is good if you want to remain above the ground but not so good if you want to maintain level flight. Imagine trying to remain exactly ten thousand feet above hilly or mountainous terrain. It could be like riding a roller-coaster as you fly up over mountains then down over valleys attempting to maintain a constant altitude.

Another way altitude is measured is as height above sea level or Mean-Sea-Level (MSL). This method is great for maintaining level flight but it offers no indication of how close to the ground you may be. It would not be unusual to be 2000 feet above sea level with your feet planted firmly on the ground.

Each method of measuring altitude has advantages in different situations. Depending on which type of measurement is needed the Altitude Indicator can display altitude in either mode. If the Altitude Indicator is currently displaying altitude in MSL mode a letter "S" will appear next to the tape. If altitude is currently displayed in AGL mode a letter "G" will appear next to the tape.

TARGET STATUS INDICATOR

If you have an air-to-air weapon armed and a target selected the target status indicator will appear on the hud to provide information on the type of target, the distance to the target and your closure rate with the target. Information on how this information is aquired can be found in the section on Radar elsewhere in this reference section.

IFF DISCRIMINATOR

A radar screen can become cluttered quickly in large battles. The pilot finding himself in this situation may accidentally target a friendly aircraft. To prevent accidents such as this the targeting system can be set to only allow targeting of certain "classes" of targets. In this case the pilot would only want his targeting system to pick out hostile targets and never anything else.

The current targeting mode is indicated at the bottom, center of the hud by one of three letters. Either "A" for all signatures, "H" for hostile targets only, or "NH" for non-hostile targets only. Change the Targeting Mode Indicator by pressing **[;]**.

VELOCITY VECTOR

The velocity vector symbol in the HUD points in the aircraft's actual direction as opposed to the direction the nose is pointed.

ILS/CLS

The Instrument/Carrier Landing System displays information on the HUD, guiding the pilot to the landing strip. The ILS/CLS consists of a vertical line and a horizontal line located in the center of the HUD, and a small mark on the heading tape. The vertical bar is the Runway Lineup Indicator and the horizontal bar is the Glide Slope Indicator. The small "^" mark on the heading indicator is the Navigation Direction indicator. Extensive instructions on the use of the ILS/CLS is contained in the Appendix.

WAYPOINT DESIGNATOR

A waypoint is a predetermined location at which a pilot has to perform some function such as changing heading. A series of waypoints can guide a pilot across vast terrain leading him to his target while avoiding dangers on the ground or avoiding detection by radar.

Waypoints are preprogrammed into the aircraft's navigation system and displayed in the hud as a hollow inverted triangle. The inverted triangle will appear to float over the waypoint location no matter the distance of the waypoint to the pilot. All the pilot need do is turn the plane until the indicator is centered in the hud and fly on that heading until he reaches the waypoint.

RANGE MARKER

The range marker will appear near the 11 o'clock position of the aiming reticle when the selected target is approximately 11000 feet away. As the distance to the target decreases, the Range Marker will rotate counter-clockwise around the edge of the Aiming Reticle. Each "o'clock" position represents 1000 feet.

ASPECT ANGLE INDICATOR

The Aspect Angle indicates the target's current heading relative to your current position. When the indicator is at or near the bottom of the pipper, it means the target aircraft is heading away from you increasing the probability of a hit.

COMBAT CONTROLS

Combat is the best part of flight simulation. This section will teach you the basics about your aircraft's combat systems, including using the radar, weapons, and countermeasures.

The main radar is located in the Horizontal Situation Display (or "HSD") and is also displayed as the On Screen Radar for convenience. It is a highly sensitive integrated radar system that enables you find and track targets in a 360° view. It combines the advantages of a traditional radar with radar-warning receivers, global positioning systems and AWACS links. Always active, the radar can be viewed by pressing **[F6]**.

The radar screen is dominated by a large circle with a small "aircraft icon" in its center. The white "T" represents your plane and the circle depicts the radar's current range. If, for example, the range is set at "10," then the circle represents a ten mile radius around the plane. Any target located within this radius will appear on the radar. The radar's default range is "40." To change the range, press **[R]** and **[Shift-R]**. This allows you to choose from ranges of 160, 80, 40, 20, 10, 5, 2 or 1 mile.

Note: *You probably should use a range of either "2" or "1" during a dogfight.*

If a target is within the range you have selected, it will appear as a dot or "blip." The blip's position in the radar corresponds to its position in space. For example, a blip at the top of the radar means that the target is directly ahead of the plane (or "twelve o-clock"). Likewise, a blip on the left side of the radar means that the target is directly to the left of the plane (or "nine o'clock").

The color and size of the dots also provide information about the target. Each color designates different kinds of objects. The colors stand for:

Red = enemy
Green = friendly
Gray = unidentified
White = missile
Brown = navy craft (such as a carrier)

The size variations also tell you where a target is located relative to your position. For instance, a large dot indicates that the target has a higher altitude, whereas a smaller dot means that the target is below you.

To choose a target for combat, cycle through the dots by pressing **[T]** and **[Shift-T]**. The currently selected target will appear encircled and its status will be displayed in the lower left-hand corner. Once chosen, the radar will track this target in the HUD with the large green target designator box.

The tracking computer will then identify the target and show its posture (friendly is green and enemy is red). The target's current altitude (in feet), speed (in knots), and heading (in degrees) are also reported.

WEAPONS SYSTEM

Having an ample supply of armed weapons is the first step to successful combat. However, you also need to know how to aim and fire your weapons. This section comprehensively explains the weapons system in JetFighter III.

WEAPON SELECTION ATA: [Backspace]

Modern fighters can be armed with several different kinds of weapons for a varierty of purposes. For example, a fully loaded F-22N may carry Sidewinders, AMRAAMS, Mavericks, and others. However, you must first select a weapon before you can fire it.

As the default mode, no weapons are armed. To arm an Air-to-Air weapon, press **[Enter]**. The first time you press **[Enter]** you will arm your M61A1 Vulcan 20mm cannon or ("GUN"). To arm an Air-to-Ground weapon, press **[Backspace]**. The name of the armed weapon will then be displayed in the lower left-hand corner of the HUD:

AM	AMRAAM Missiles
S/W	Sidewinder Missiles
MK84	2,000 lbs. Bombs
MK82	500 lbs. Bombs
MAV	Maverick Missiles
GUN	M61A1 Vulcan 20mm cannon

Next to the name in the HUD is the quantity which remain in stores. For example, if it displays "S/W 2" then two Sidewinder missiles ready and armed. Each time you fire a weapon, one unit is deducted from its stores. Likewise, if your aircraft was not loaded with a particular kind of weapon, it will not appear as a choice.

WEAPON TARGETING — [T]

You must select a target for your weapons. To select a target, press **[T]**. This brings up one of the targets appearing in the radar. To switch to the next target, press **[T]** again or press **[Shift-T]** to return to a previous target. Notice that the available targets depend upon the type of weapon you have selected. For example, if you have chosen an air-to-ground weapon (like the AGM-65 Maverick), then you will not be able to target an incoming enemy aircraft.

TARGET CLOSEST — [Y]

After selecting a weapon, pressing **[Y]** will target the enemy that is closest to you.

TARGET IN CENTER OF HUD — [U]

Pressing **[U]** will target the object that lies within your aiming reticule. This target will be appropriate to the weapon selected, either ATA or ATG.

WEAPON FIRING — [Spacebar]

After you have selected a weapon and a target, you are ready to fire. To fire the weapon, press the **[Spacebar]**. Each time you press the **[Spacebar]**, one unit is removed from the available stores. After the stores are depleted, you cannot fire that weapon until the plane is rearmed at a base. To continue firing, you need to select a different weapon with available stores.

The probability of success depends upon many factors. Angle, distance, orientation, velocity, maneuverability, and a host of other conditions all play a role. In addition, every kind of weapons has its own unique strengths and weaknesses. For example, the M61A1 Vulcan 20mm cannon must be fired in front of the target (i.e., "leading the target") to compensate for its motion. Only experience can teach you what weapon to fire and when.

Note: *With most advanced joystick models, the trigger will always fire the cannon, and one of the buttons one the top of the joystick will toggle through the available armaments and another button will launch that selected weapon.*

COUNTERMEASURES

A countermeasure is any tactical defense employed by an aircraft to avoid being hit by an enemy's weapons. In general, there are two kinds of countermeasures: deployable and electronic. Both are discussed below.

DEPLOYABLE COUNTERMEASURES

Deployable countermeasures include any object jettisoned by the aircraft to confuse or distract incoming missiles. The two most common deployable countermeasures are flares and chaff.

FLARES — [F]

Flares are launched from your aircraft and burn very, very hot. This intense heat is designed to confuse heat-seeking weapons into thinking the flare is the target, and not your engines! The number of flares remaining in stores can be viewed in the Systems Display. (For more information, see Systems Display in this reference section).

CHAFF — [C]

When launched, chaff packs burst open into clouds of metallic foil and wire . This cloud is designed to confuse radar-seeking weapons (like the AMRAAM or Vympel R-77) into thinking that it is the target. The number of chaff packs remaining in stores can be viewed in the Systems Display. (For more information, see Systems Display in this reference section).

ELECTRONIC COUNTERMEASURES — [J]

Electronic countermeasures (or "ECM") are electronic signals sent out to confuse or "jam" incoming missiles. ECM jamming devices emit such a strong radar signal that they can sometimes hide an aircraft's actual position from radar-seeking weapons like the AMRAAM or Vympel R-77. This kind of noise jamming is most effective against discrete targets that are still far away. You can turn the ECM device on and off by pressing **[J]**. When activated, the red "ECM" light will appear on the Systems Display. Be careful to use the jammer only when needed. Jamming a target that has not yet detected you may actually alert it to your presence!

VIEWS

INTERNAL VIEWS

In JetFighter III you will spend most of your time in the cockpit. A wide variety of views are available from within the cockpit. Some views help you scan the skies for bogies, and others help you check cockpit instrumentation.

PRE-SET VIEWS

The following pre-set views quickly pan your view to the requested angle.

LOOK AHEAD (NORMAL VIEW)— [F1]

This is the default view, looking forward through the canopy. It is the primary view for travel and combat. "Look Ahead" is activated by pressing **[F1]**.

If you are already looking ahead when you press **[F1]** the instrument panel will be toggled off to provide a "full-screen" view. Think of this as a "panic button" which will always return you to the "Look Ahead View".

LOOK LEFT — [F2]

This preset view quickly looks out the left window of the fighter. This view is useful when you need to locate an object or landmark to the left of the plane. "Look Left" can be activated by pressing **[F2]**. To return to the "Look Ahead" default view, press **[F1]**.

LOOK RIGHT — [F3]

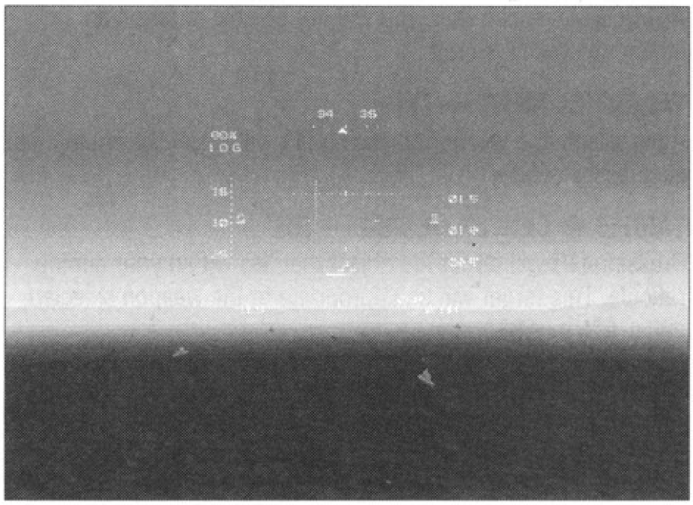
This preset view looks out the right window of your aircraft. This view is useful when you need to locate an object or landmark to the right of the plane. "Look Right" can be activated by pressing **[F3]**. To return to the "Look Ahead" default view, press **[F1]**.

LOOK BACK (CHECK SIX) — [F4]

This preset view looks out the back of the airplane. This view is useful when you need to determine if an enemy is on your six (behind you). "Look Back" can be activated by pressing **[F4]**. To return to the "Look Ahead" default view, press **[F1]**.

MULTI-FUNCTION DISPLAY (MFD) VIEWS

The MFD views enable you to look down at the cockpit instrumentation. In the F-22N each of the 4 different MFDs is assigned a function key **[F5]** - **[F8]**. If you are curious about the operational functions of the different MFDs see the reference section entitled Multi-Function Displays in this manual.



LEFT MFD / DEFENSIVE DISPLAY - [F5]

Press **[F5]** to view the Defensive Display. Press **[F5]** again to cycle through the modes of this MFD. Press **[F1]** to return to "Look Ahead" view.

CENTER MFD / HORIZONTAL SITUATION DISPLAY - [F6]

Press **[F6]** to view the Horizontal Situation Display. This MFD has only one mode. Press **[F1]** to return to "Look Ahead" view.

RIGHT MFD / OFFENSIVE DISPLAY - [F7]

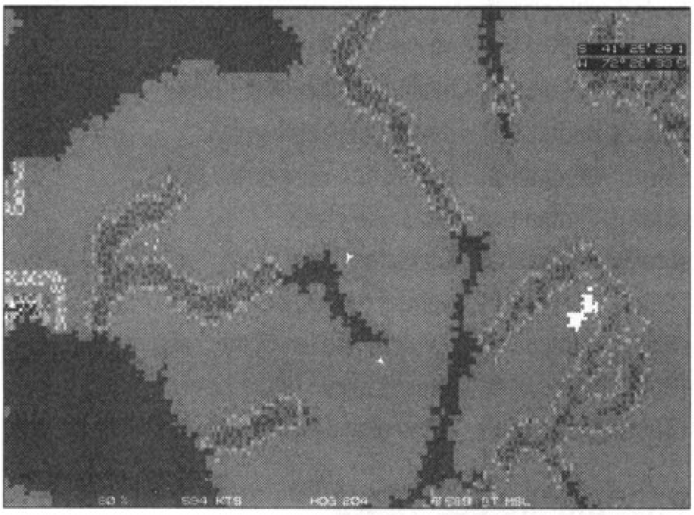
Press **[F7]** to view the Offensive Display. Press **[F7]** again to cycle through the modes of this MFD. Press **[F1]** to return to "Look Ahead" view.

LOWER MFD / SYSTEMS DISPLAY - [F8]

Press **[F8]** to view the Systems Display. This MFD has only one mode. Press **[F1]** to return to "Look Ahead" view.

MAP VIEW — [M]

Map view is invaluable during a mission because it enables you to quickly get your bearings, find a target, or increase situational awareness. To toggle map view on or off, press **[M]**.



In map view your plane is designated by the white aircraft icon located in the center of the map. Other icons may be present as well but your plane is always the one represented at the center.

The zoom keys **[<]** and **[>]** can be used in map view to enlarge or reduce map area coverage. Pressing **[M]** again will return you from map view.

TACTICAL VIEW — [F9]

Manipulating views and piloting the aircraft can be difficult to perform simultaniously, especially while you are under attack. Tactical (TAC) view by automatically following a target whether it is on the ground or in the air. Having your view locked onto the target allows you to pilot the plane unimpeded. Toggle TAC view on and off by pressing **[F9]**.

***Note:** You may want to be sure the instrument panel is visible (**[P]**) while using TAC view. Rapid maneuvering can make tactical view disorienting if the panel is off.*

VIRTUAL COCKPIT VIEWING

If you are a long-time flight sim fan you will find JetFighter III's Virtual Cockpit a welcome change over the old static views available in most flight simulators. The virtual cockpit does not limit your views to front, right, left, and back. It allows you to smoothly view your entire surroundings as though you were moving your head within the simulator.

LOOKING AROUND

To pan your view up press **[Numpad 3]**. To pan your view down press **[Numpad Del]**. Pan left is **[Numpad 7]** and pan right is **[Numpad 9]**. You may use any combination of these keys to focus your view on anything in your surroundings. To re-center your view to the default "Look Ahead" view press **[Numpad 5]** or **[F1]**.

Using the virtual cockpit is even easier if you have a joystick. Panning your virtual view with a joystick is accomplished by holding down joystick button #2 while moving the joystick. As long as the button is held the joystick will only affect your view, not the actual plane maneuver. Once you have released the button your view will be locked in the direction you left it. To re-center to the "Look Ahead" view quickly click joystick button #2 once or press **[F1]** on the keyboard.

***Note:** Be sure your joystick has been properly selected during Installation and calibrated in the Simulator.*

ZOOMING

While in any view you can "zoom in" on what you are looking at by pressing the **[>]** key. To "Zoom out" use the **[<]** key. To return to the default "Look Ahead" non-zoomed view press **[Numpad 5]** or **[F1]**.

HEAD MOVEMENT — [Ctrl-H]

When you turn a corner while walking or driving a car you naturally swivel your head in the direction of the turn. This occurs while flying as well but most simulators keep your view unnaturally locked straight ahead. JetFighter III provides an optional feature called "head slide" which will automatically turn your view slightly into every banking turn you make. Toggle this feature by typing **[Ctrl-H]**.

INSTRUMENT PANEL ON/OFF — [P]

Pressing **[P]** toggles the instrument panel off providing an unobstructed view of your surroundings. The HUD information will remain visible so you will still have enough information to fly the plane. With the panel off, any views previously obstructed by part of the aircraft will now be clear. A good example would be the "Look Back" view which is normally obscured by the seat. **[F1]** can also be used to toggle the instrument panel, but it also returns to the forward looking "normal" view.

At times you may wish to view one of the MFDs using a preset view key **[F5]** - **[F8]** when the instrument panel is off. Pressing one of these keys will toggle the instrument panel on and center your view on the selected MFD. Pressing **[F1]** will then return you to the "Look Ahead" view and toggle the instrument panel off again.

EXTERNAL VIEWS

JetFighter III provides a multitude of external views enabling you to view the outside of your aircraft from any angle. External viewing is as flexible as internal viewing and you still have control of the aircraft. You will be able to watch exciting events like takeoffs and landings, missile firings, bombing runs and more, all from outside the plane.

ACTIVATING EXTERNAL VIEW — [NUMPAD -]

To activate external viewing press **[NUMPAD -]**. To deactivate external viewing press either **[NUMPAD -]** or **[F1]**.

PANNING

To pan your view around the plane you must have already activated external viewing by pressing **[NUMPAD -]**. Once outside the plane you can smoothly control your view using the same controls as the internal cockpit view.

To rotate your view under the plane press **[NUMPAD Del]**. Rotate your view above the plane by pressing **[NUMPAD 3]**. Use **[NUMPAD 7]** to rotate your view clockwise or **[NUMPAD 9]** to rotate your view counter-clockwise.

Panning your external view with a joystick is done by holding down joystick button #2 while moving the joystick. As long as the button is held the joystick will only affect your view, not the plane itself. Once you have released the button your view will be locked where you left it.

Press **[F1]** or **[NUMPAD -]** to return to the interior view.

Note: *You may have to consult your joystick manufacturer's instructions before this feature will work.*

ZOOMING — [<] AND [>]

While viewing from any orientation you can "zoom in" on what you are looking at by pressing the **[>]** key. You can "zoom out" with the **[<]** key. Press **[NUMPAD 5]** to reset to the default external view.

Some advanced joysticks may have a button assigned to zoom.

PRESET EXTERNAL VIEWS

Nine preset external views are provided. Each preset view can be activated by

holding down the **[Shift]** key and using the Numpad. In fact, the key's position on the Numpad corresponds to its external view. These preset external views include:

[Shift][Numpad-1] - behind and left of the plane

[Shift][Numpad-2] - directly behind the plane

[Shift][Numpad-3] - behind and right of the plane

[Shift][Numpad-4] - left of the plane

[Shift][Numpad-5] - above the plane

[Shift][Numpad-6] - right of the plane

[Shift][Numpad-7] - ahead of and left of the plane, looking back

[Shift][Numpad-8] - directly ahead of the plane, looking back

[Shift][Numpad-9] - ahead of and right of the plane, looking back

PROGRAMMABLE VIEWS

Perhaps there is a particular view angle you are fond of and would like a quick key combination to activate it. The external views can be customized to your liking. To do so, first use virtual viewing to select the angle you would like to save. Next, press **[Ctrl]** and the preset viewing key combo you want to change. For example, if you wish to program your current view to be activated by **[Shift][Numpad 3]** press **[Ctrl][Shift][Numpad 3]** and from that point on **[Shift][Numpad 3]** will always jump to that view.

FLY-BY VIEW — [F11]

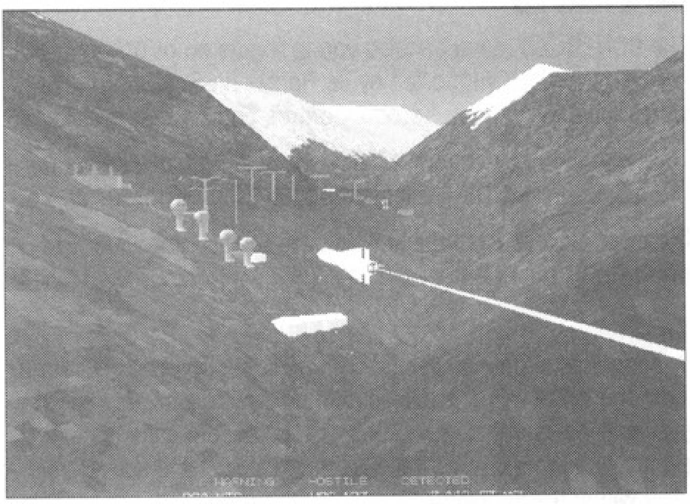
JetFighter III offers a dramatic fly-by view of your plane. This view locks the camera ahead of the plane as you fly toward it. As you speed by, the camera tracks your aircraft, keeping it in view. You can press **[F11]** again to re-set the view. While in fly-by view you are still in full control of your aircraft. As always, you can press **[F1]** to return to the cockpit.

AUTO FLY-BY VIEW: [CTRL][F11]

This is just like fly-by view, except as your aircraft flys out of sight, the view will automatically reset to another flyby.

WEAPON VIEW — [F10]

Weapon view is an exciting feature enabling you to follow a missile or bomb to its target. While in weapon view you can use all the panning and zooming controls available in the external aircraft view but now you will be viewing the weapon instead of your plane. To return to the cockpit press **[F10]** again or **[F1]**. If you continue viewing the weapon until it detonates your view will automatically be returned to the last view you were in before pressing **[F10]**.



TOWER VIEW — [NUMPAD *]

Tower view will place your view at an airport control tower or aircraft carrier superstructure depending on where you started your mission. To activate tower view press **[Numpad *]**. Try buzzing the tower and switching to tower view as you pass by! Pressing **[Numpad *]** again will toggle off tower view and return you to the view that was current before activating tower view.

TACTICAL VIEW — [F9]

In external mode this view keeps you and your target in the frame at all times.

IN-FLIGHT MENU

The In-Flight Menu provides a great deal of control over the simulator without the need to exit to the front end to make adjustments. Activate the in-flight menu in the simulator by pressing the **[ESC]** key. On the menu you will see eight menu headings: GAME, CONTROLS, VIEW, DISPLAY, AVIONICS, SOUND, CHEATS, INFO/HELP. Following are detailed descriptions of each menu and its individual functions.

GAME

The game menu contains functions to change free flight parameters within the simulator, abort missions, restart missions, exit the simulator or exit JetFighter III completely.

FREE FLIGHT SETUP

You may begin a FREE FLIGHT session at any time, even right in the middle of a mission. While not as feature rich as the FREE FLIGHT setup, if you wish to begin a FREE FLIGHT session without exiting the simulator you may work with the parameters provided through this menu.

ABORT MISSION - CONTINUE AS PRACTICE

This feature enables you to fly a FREE FLIGHT session with all of the parameters set by a mission. In other words, if you enjoy the environment in a particular mission this feature permits engaging a FREE FLIGHT session that is set up exactly the same as the mission. Enter the simulator through the desired mission then switch to FREE FLIGHT with this menu option.

ABORT MISSION - RETURN TO CARRIER

If for any reason you wish to abort the mission you are currently engaged in, return to the carrier via this menu option.

AUTO LAND

When flying missions you can avoid the need to return to the carrier and land by selecting AUTO LAND. The mission objectives must be completed and the MISSION COMPLETE dialog box must appear BEFORE you can select AUTO LAND.

REVIEW MISSION ORDERS

If any details of your mission orders have slipped your mind, you can review the orders for your current mission here.

RESTART CURRENT MISSION

Off to a bad start? Restart the current mission with no penalty to your campaign statistics.

RESUME FLIGHT

Most of the In-Flight menus display this RESUME FLIGHT option. Selecting RESUME FLIGHT or pressing **[R]** will return you to the simulator.

EXIT JETFIGHTER III

Selecting EXIT JETFIGHTER III will completely exit JetFighter III. Your mission will not be saved.

CONTROLS

The CONTROLS menu enables you to toggle on or off the use of hardware devices supported by JetFighter III. Supported hardware include Joysticks, Throttle Control, and Rudder Pedals.

To fine tune the use of any of these devices with JF3 select the CALIBRATE or MODIFY selection on the CONTROLS menu.

For direct access from the simulator to the calibration screen press **[ESC]** then **[J]**.

VIEW

While not as simple as using "hotkeys" directly within the simulator, the VIEW menu provides another way to activate various available views. It also functions as a quick reference because each view menu item lists the keystroke needed to activate the view within the simulator.

A thorough explanation of all available viewing option controls can be found in the section on VIEW CONTROLS elsewhere within this reference section.

DISPLAY

Flight Sim fans come from all walks of life, and this means a variety of computer equipment ranging from barely compatable to state-of-the-art will put JetFighter III to the test. Many of the simulator environment controls are available on the DISPLAY menu. These are offered as a way to customize the look and feel of JetFighter III to suit your needs. Adjusting some options will decrease the graphic detail, but give you a faster frame rate.

To see what we mean by "frame rate", switch the simulator to the highest resolution mode 640 x 480, select 100% screen size, turn on clouds, turn on terrain shading, and then Resume Flight. Unless you have a very fast computer your eye should be able to detect the changes from one frame to the next as you fly along. Switch to low resolution 320 x 200 mode and fly again. The frame rate should be so fast you can not detect the change from one frame to the next.

If you currently are running JetFighter III on a computer that just barely meets the minimum requirements, you may wish to turn off or change some display options. Reducing screen resolution will have the greatest effect on speeding up the frame rate. Experiment with different configurations until you are comfortable with the trade-offs.

CLOUDS — [Alt][C]

There are three different cloud settings with two different types. SMOOTH gives you very natural looking clouds. BASIC has a more simple cloud cover effect. OFF will display a clear blue sky without clouds. Turning off the cloud feature will improve your frame rate.

VISIBILITY — [Alt][V]

This feature enables you to change the level of atmospheric haze within the simulator. If you wish to fly with maximum visibility, set this option to CLEAR.

For reduced visibility set it to HAZY. And for low visibility set it to FOGGY. Lower visibility settings may improve frame rate.

TERRAIN SHADING — [Alt][K]

Turning off TERRAIN SHADING will improve your frame rate but it will also reduce the beauty of JetFighter III terrain.

RESOLUTION — [Shift] [F9]-[F12]

JetFighter III offers four modes of resolution, 320 x 200, 640 x 350, 640 x 400, and 640 x 480. The lowest resolution mode (320 x 200) provides the BEST frame rate of any of the modes. Note that not all video cards support all resolutions. (640x350 is the least common supported resolution.)

Frame rates decrease with increased resolution. The reason for this decrease is related to the number of pixels required to display one frame of animation in each mode. Low resolution mode 320 x 200 requires the program to draw 64,000 pixels to fill the screen. The highest resolution mode 640 x 480 requires the program to draw 307,200 pixels to fill the screen. All resolutions roughly fill the same area of the screen, only the pixel SIZE is different between them.

SCREEN SIZE — [Alt][F5]

The Screen Size option will reduce the number of pixels drawn per frame but will NOT effect the resolution. It does this by limiting the number of lines of pixels drawn per frame. The excluded lines are taken from the top and bottom of the screen in order to affect your view the least. The Screen Size can be reduced from 100% down to the "letterbox" sizes of 80% and 60%. This is much like the effect seen in movies.

REDOUT

JetFighter III emulates redouts for enhanced realism. Real fighter pilots must avoid the danger of artificially creating a great deal of centrifugal force on themselves by turning too sharply at high speeds. The danger in creating centrifugal force in this fashion is it will force the blood in the pilot's circulatory system to pool up at one end of his body or the other. If the blood rushes toward his head and away from his feet he may lose consciousness or "red out".

BLACKOUT

JetFighter III also emulates blackouts for enhanced realism. If the blood rushes toward his feet and away from his head he may lose consciousness or "black out".

SUN WASH

When you look directly into the sun the overwhelming amount of light affects your ability to see your surroundings. The optional SUN WASH visual effect is provided for enhanced realism.

HEAD MOTION — [Ctrl][H]

JetFighter III provides another optional feature called "head motion" which will automatically turn your view slightly into every banking turn. A more detailed description of HEAD MOTION can be found within this reference section.

AVIONICS

The Avionics menu provides functions to control the operation of various cockpit instruments.

HUD BRIGHTNESS — [H]

The brightness of the HUD is controllable for different environments. During the day the display may be difficult to see against the terrain unless it is set to one of its brightest settings. Conversely, dim the hud while flying at night to keep your eyes sensitive to the dark terrain. **[H]** toggles the HUD between the 0%, 20%, 40%, 60%, 80%, 100% and AUTO. AUTO will automatically adjust the brightness of the HUD based upon the time of day.

ATTITUDE INDICATOR (PITCH LADDER) — [L]

Toggle through the pitch ladder modes with this menu option. NORMAL provides three degree levels of pitch, FINE provides six degree levels of pitch, and OFF disables the pitch ladder.

INSTRUMENT PANEL — [P]

The entire cockpit can be toggled off providing an unobstructed view of your surroundings. The HUD information will remain visible but the control panel and all other cockpit items will disappear.

AUTO RANGING — [Ctrl][R]

Turning Auto Ranging on will cause the radar to automatically select a range that keeps the currently selected bandit in your radar.

ON-SCREEN RADAR — [Alt][R]

The radar is the most commonly used instrument not displayed in the HUD. To check the radar you would have to take your eyes off the action and risk disorientation or losing sight of a target. JetFighter III provides an On-Screen radar to compensate.

TARGETING MODE — [;]

The Targeting Mode feature provides a way to selectively target identifyable radar returns by type. To target any object shown on radar set this option to ALL SIGNATURES (A). To target only friendlies select NON-HOSTILES (NH) or to target enemies only select HOSTILES ONLY (H).

Setting the targeting mode to HOSTILES ONLY will go a long way toward keeping the inexperienced pilot from splashing friendly aircraft.

ALTIMETER — [Alt][A]

The Altimeter operates in either of two modes. It will show your altitude above Mean Sea Level (MSL) or your altitude Above Ground Level (AGL). AGL mode is very helpful in terrain avoidance while MSL mode provides a more accurate altitude reading relative to sea level.

SOUND

The Sound menu provides ON/OFF control and volume control for the simulator's music, sound effects, and voices.

SOUNDS MODE

The SOUNDS MODE control toggles ALL available sounds on and off. With this option set to OFF none of the sound effects, voices or music will be heard.

SOUND EFFECTS VOLUME

Toggle the volume of sound effects such as explosions, fire, bomb hits, etc. between OFF, LOW, MED, HIGH, or FULL.

MUSIC VOLUME

Toggle the music volume between OFF, LOW, MED, HIGH, or FULL.

RADIO CHATTER VOLUME

Adjust the radio chatter volume to the desired level: OFF, LOW, MED, HIGH, or FULL.

WARNINGS VOLUME

All of the warning beeps, boops, horns and sirens can be adjusted between OFF, LOW, MED, HIGH, or FULL.

ENGINE VOLUME

Set the engine volume to a level you are comfortable with. Options include OFF, LOW, MED, HIGH, or FULL.

CHEATS

For those of you who may not be familiar with the term "cheats", a "cheat" is a way of defying the "normal" rules in a program. Cheats are handy for the person who's skills in certain areas are not yet developed but they would still like to use the simulator without getting wiped out. First time users benefit most from this cheat but even the daredevil pilot practicing low altitude manuevers has been known to use it.

RE-ARM with [SHIFT-M]

With the RE-ARM cheat set to YES you will be able to re-arm depleted stores of weapons with the **[SHFT-M]** key combination in the simulator. There is no limit to the number of times **[SHFT-M]** can be used.

RE-FUEL with [SHIFT-F]

If you fly around for long periods of time you may find yourself running out of fuel. Ordinarily you would land at an airport or the carrier to be re-fueled and re-armed but with this feature set to YES you will be able to re-fuel at any time by pressing **[SHFT-F]**.

INVULNERABLE TO ATTACK

With the INVULNERABLE TO ATTACK feature set to YES enemy weapons will not effect you.

NO GROUND CRASHES

The NO GROUND CRASHES feature prevents you from being destroyed if you crash into the ground. Your aircraft will "bounce" up off the ground.

NO IN-AIR COLLISIONS

In-air collisions are rare, but to prevent them from damaging your aircraft set this option to YES.

UNDAMAGEABLE AIRCRAFT

Near misses from missiles and AAA may cause damage to aircraft systems and flight controls. Setting this option to YES will prevent this damage.

LANDING EASE

Mastering landings may take a while or remain difficult for some people. The most difficult setting is REALISTIC. EASY or MODERATE can be chosen to make landing easier.

GUN AIMING EASE

Shooting down an enemy plane with guns requires some fancy flying and good aim. If set to REALISTIC aiming the gun can be quite difficult. Selecting EASY or MODERATE will reduce the need for aiming accuracy.

TIME COMPRESSION

Some missions may require you to fly several hundred miles. If you want to speed up the cross-country flight and get right to the action use JetFighter III's Time Compression feature. For more information on TIME COMPRESSION mode see OTHER CONTROLS elsewhere in this reference section.

INFO/HELP

If you can't remember the keystroke for a particular feature or want to check your current statistics this is the place to go.

KEYBOARD HELP

Remembering the multitude of keystrokes required to perform every function may take a little time. If you need to quickly refresh your memory, select KEYBOARD HELP for a complete list of available functions.

CURRENT STATISTICS

See this menu if you wish to check your current statistics prior to the end of the mission.

MISCELLANEOUS CONTROLS

JetFighter III is configurable to your preferences. In addition, the program provides some keyboard short-cuts which may be useful. These utility functions include: volume level, pause, and exit.

ENGINE VOLUME LEVEL — [E]

The engine volume is adjustable between five preset levels. Press **[E]** to toggle through the levels.

PAUSE — [CTRL] [P]

Press **[P]** to pause the simulator at any time. When the simulator has been paused the word "PAUSED" will appear at the upper left of your screen. To end the pause toggle **[P]** again.

EXIT TO DOS — [CTRL-C] OR [ALT-X]

If you would like to exit JetFighter completely press either **[Ctrl-C]** or **[Alt-X]**.

A dialog box will appear, asking if you want to quit the game and return to DOS.

SIMULATOR COCKPIT VOICES

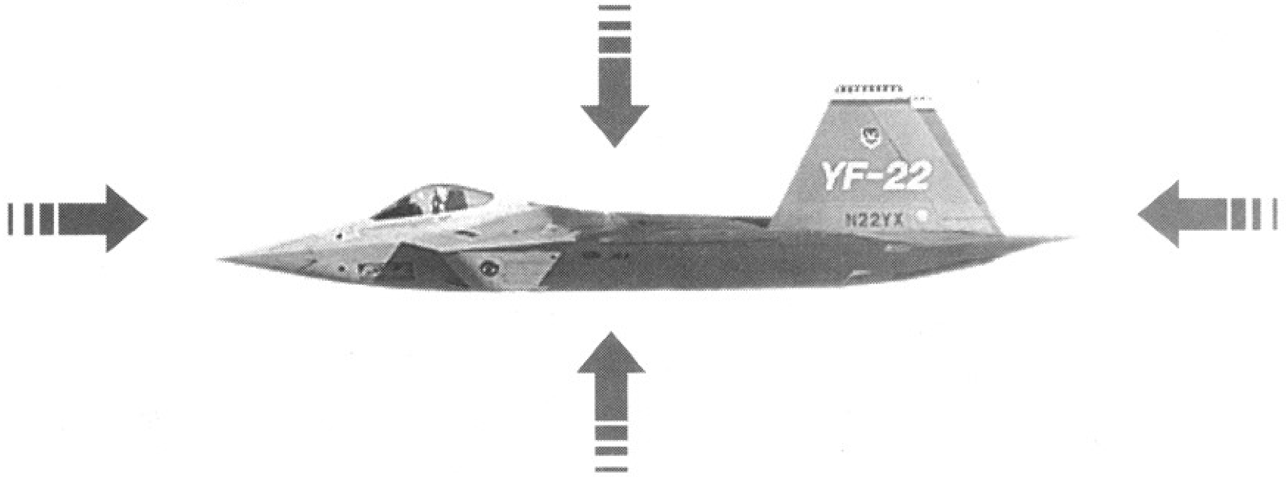
Please remember that the male voice that you hear in the cockpit is the voice of your wingman. The female voice is the voice of your plane's onboard computer.

PILOT NOTES

JetFighter III does not require any specialized knowledge about flight simulation. However, it is useful to know some basic information about aerodynamics, flight controls, pursuit tactics, dogfighting, emergency procedures and technical data. This section will provide you with detailed pilotís notes on these subjects.

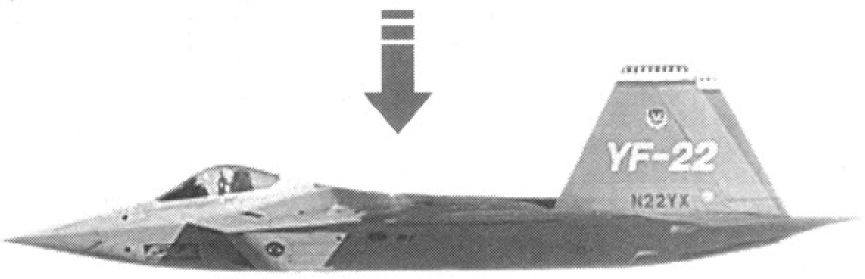
AERODYNAMICS

Piloting a fighter requires an understanding of aerodynamics and your airplane's attributes. You must appreciate the impact of weight, lift, drag and thrust. In the heat of combat, these issues are more than just an idle curiosity. Understanding how and why your plane operates is essential to victory.



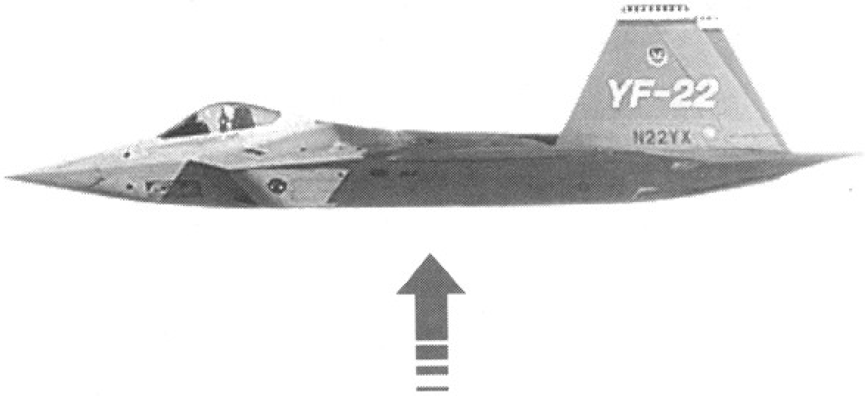
Weight

The concept of weight is probably the easiest to understand. An airplane, like any object, has a weight as the result of gravity. In the air, this weight acts as a downward force on the plane. As you know, the force of gravity is a constant of 32.2 feet per second.^{2} Of course, this factor is the greatest obstacle to flight.



Lift

Lift is the force exerted on the plane's wing as it cuts through the air. It is the push up or down (depending upon the angle of the wing) which serves to raise or lower the airplane. If the force of lift exceeds the plane's weight, the aircraft will gain altitude. Conversely, if the force of lift is less than the plane's weight, it will descend.

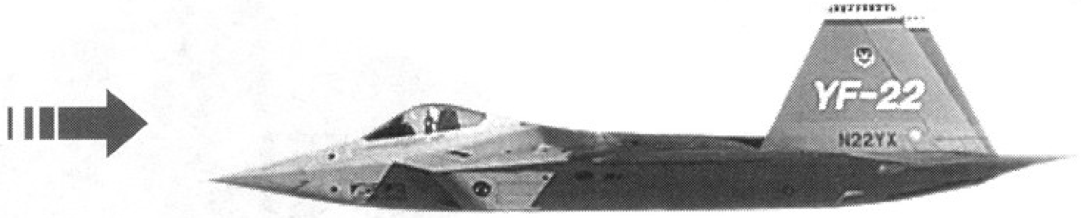


The angle of the wing is called its "angle of attack." When your wings are at a greater angle to the airflow ("'steep"), the lift is greater. Of course, the "flatter" your wings are, the less lift there is. The relationship between lift and angle are not perfect, however. If a wing's angle greatly increases, less air can pass and lift decreases. Without adequate thrust, the plane will literally fall out of the sky.

Although the movement of air over the wing surfaces create lift, they don't help the plane maneuver. It is up to the plane's ailerons, rudders and elevators to direct the airflow. The controls alter the flow of air and change the lift, creating the ability to maneuver. Without these controls, an airplane would only be able to go up or down.

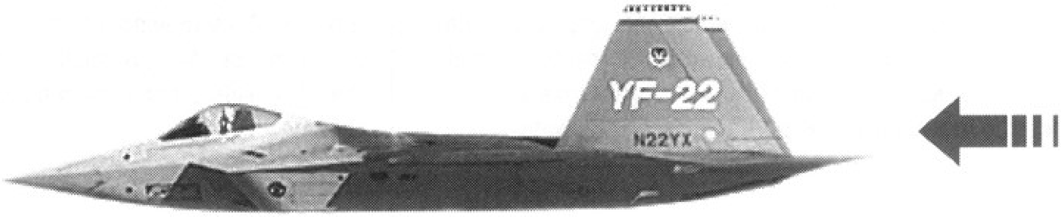
Thrust

In a fighter, thrust is the force exerted by the jet engines that drive you through the air. It is the reason that air flows over the wings and creates lift. Without this thrust, the plane would sit idly on the ground. Consequently, it is the single most important component of air travel.



Drag

Drag is the side effect of thrust. It is the plane's resistance to the air that acts as a force pushing it backward. Like lift, however, drag increases the faster the fighter goes and the steeper the angle of attack.



BASIC CONTROLS

Although there is nothing "basic" about flying a million dollar jetfighter, there is some fundamental equipment. There are three main controls inside a jetfighter. They are the stick, throttle, and rudder pedals. You need to familiarize yourself with them since they are your link to the aircraft.

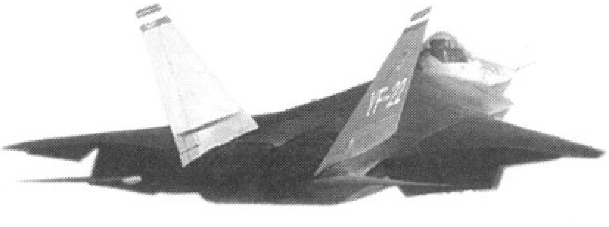
Flight Stick

The flight stick (or "stick") is easily the most important piece of equipment in the cockpit. It is your main source of control and direction, acting like the airplane's steering wheel. However, unlike its automotive cousin, a plane has to operate in three-dimensional space. This means that the stick can move the plane left and right, as well as up and down.

FLIGHT CONTROL SYSTEM
MARK II
THRUSTMASTER

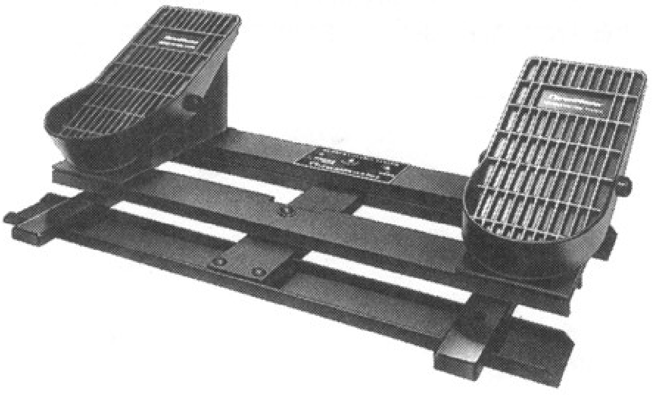
In flight, pulling back on the stick will raise the front (or 'nose") of the plane and gain altitude. Conversely, pushing forward on the stick will lower the nose and lose altitude. The direction of the nose is called "pitch". The stick accomplishes these changes by moving the "elevators" on the plane's wings.

The stick also controls the aircraft's left and right (or "lateral") movement. By moving the stick to the left, the aircraft will roll to the left. Similarly, pushing the stick to the right, it will roll to the right. This lateral movement is controlled by the airplane's "ailerons."

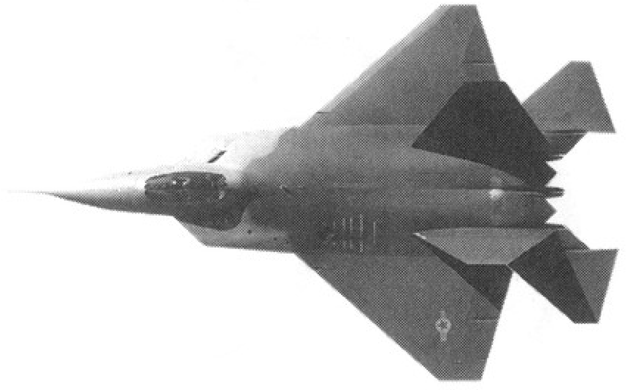


Note: *Besides left, right, up and down, the stick can also be used in degrees (i.e., down-left). For example, by pushing the stick forward and to the left, the fighter will dive and roll to the left.*

Rudder Pedals



You may have realized that the stick only controls the plane in two dimensions: roll and pitch. The third dimension arises when you turn (not roll!) the plane left or right. This is called 'yaw." It is controlled by the plane's rudder pedals on the floor of the cockpit. Applying right rudder yaws the plane to the right, while applying left rudder yaws the plane to the left.



Note: *Although JetFighter III will work with many kinds of rudder pedals, they are not necessary. You can still yaw the airplane by using the keyboard.*

Throttle

The throttle controls the fighter's speed (or thrust). You can increase the plane's thrust by pushing the throttle forward, or decrease your thrust by pulling back on the throttle. Of course, the throttle is not a switch. Like a gas pedal, more thrust is created the further you push it.

Combat experience has shown that sometimes a pilot needs an extra "boost" to complete a mission. Sometimes this means closing in on a target; other times it means evading a surface-to-air missile. As the result, many modern planes are equipped with "afterburners." These afterburners actually increase engine thrust by dumping raw fuel into the engine's exhaust and igniting it. Although it creates a powerful effect, it consumes fuel at an alarming rate (as much as five times the full throttle). Consequently, afterburners must be used very sparingly.

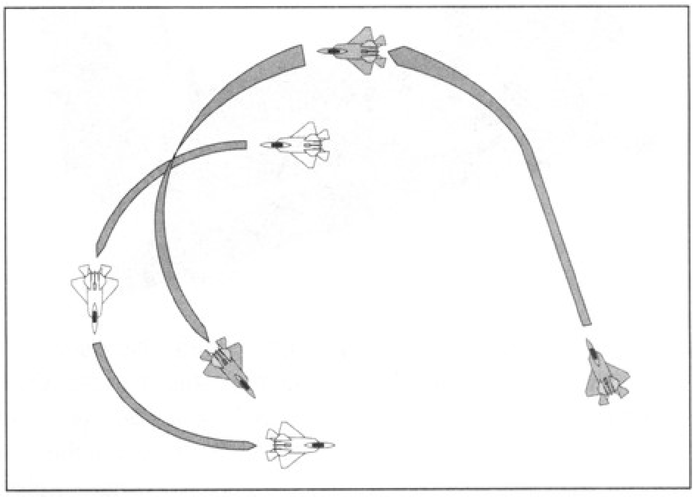
Note: *Although JetFighter III will work with many throttle systems, they are not necessary. You can still adjust the airplane's speed by using the keyboard.*

PURSUIT TACTICS

If aerodynamics are the basics of flight, pursuit tactics are fundamentals of air combat. They are absolutely necessary to create an opportunity to engage an enemy. Pursuit curves allow you to lay in a trajectory that will bring you closer to your target and into a better firing position. In general, there are three types of pursuit tactics: pure, lead, and lag.

Pure Pursuit

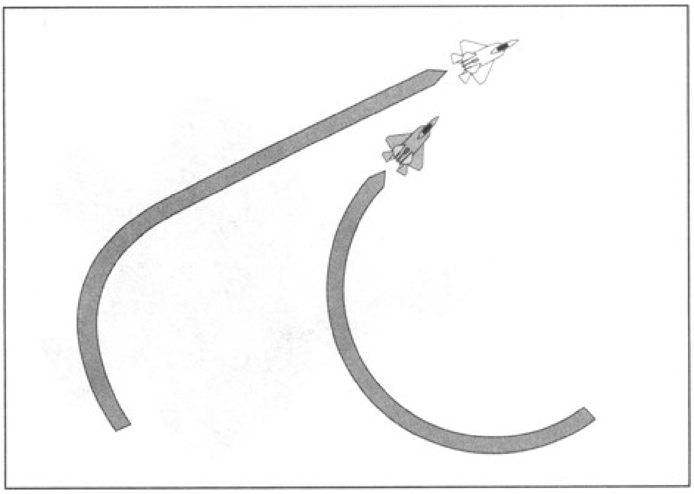
Pure pursuit requires you to simply follow the target's movements. It is most effective when you are gradually closing in on a slower target. You generally want to use pure pursuit right before you attack since the position maximizes combat effectiveness.



Lead Pursuit

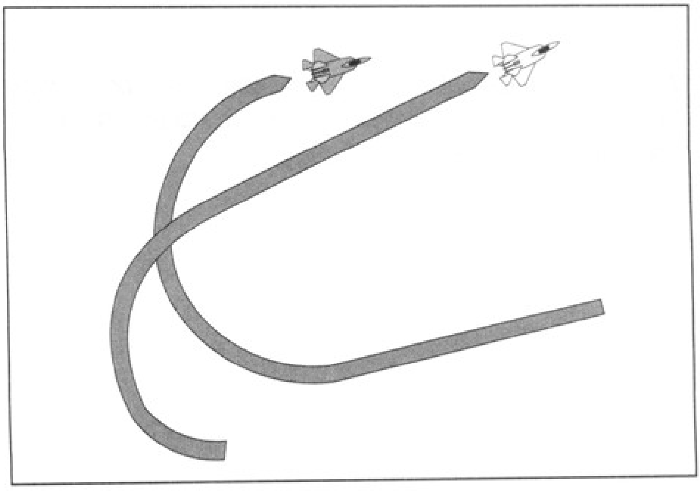
Lead pursuit is the best pursuit tactic to use to close on your target. It requires you to anticipate where the bandit will be and to head toward that spot (or 'lead" the enemy). The goal is not to get to the spot first, but to be lined up to fire at the bandit when it arrives at there. Because you're pointing ahead of the target, you will close more quickly in lead pursuit than by using any other tactic. However, if you set the pursuit curve too far away, the bandit may be able to escape.

Note: *It is better to perform several smaller lead pursuit curves, then to use just one large curve.*



Lag Pursuit

Lag pursuit is most effective when your aircraft has a superior turn rate. This pursuit curve requires you to set your flight path just slightly behind the target, following it through a turn. Easy to accomplish, just make sure that your flight path indicator is slightly below the opponent's plane.



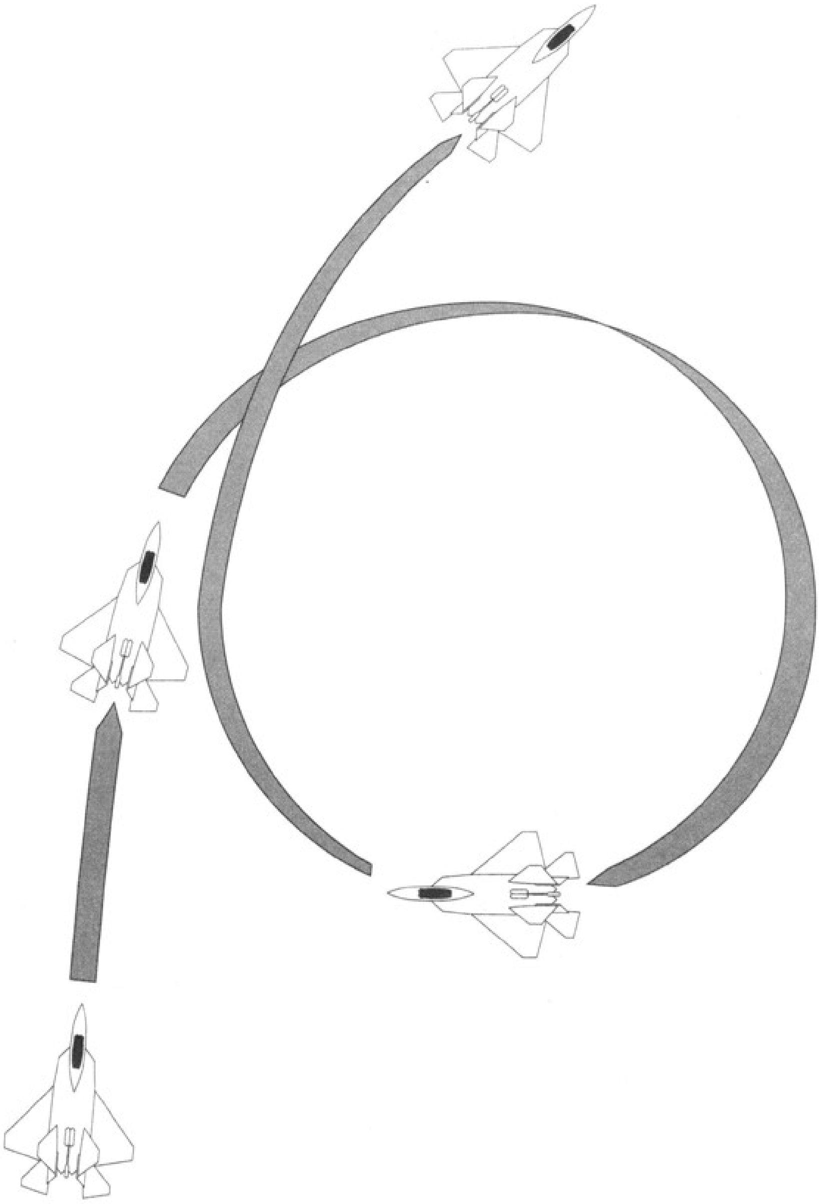
ADVANCED MANEUVERS

Air combat is a deadly contest in an ever-changing environment. To succeed, you will have to be well versed in the following advanced maneuvers. As the result, we strongly recommended that you practice these techniques before you engage your first bandit.

Barrel Roll

Use the Barrel Roll when you are rapidly approaching a slow-moving target and want to stay behind it. To perform the Barrel Roll first direct you plane into a 30° climb. Pull the stick all the way to the right (or left) and back. Your plane will roll inverted then dive into the loop. Allow the plane to complete a full 360° roll and then gently pull the stick in the opposite direction of the roll, leveling your plane smoothly.

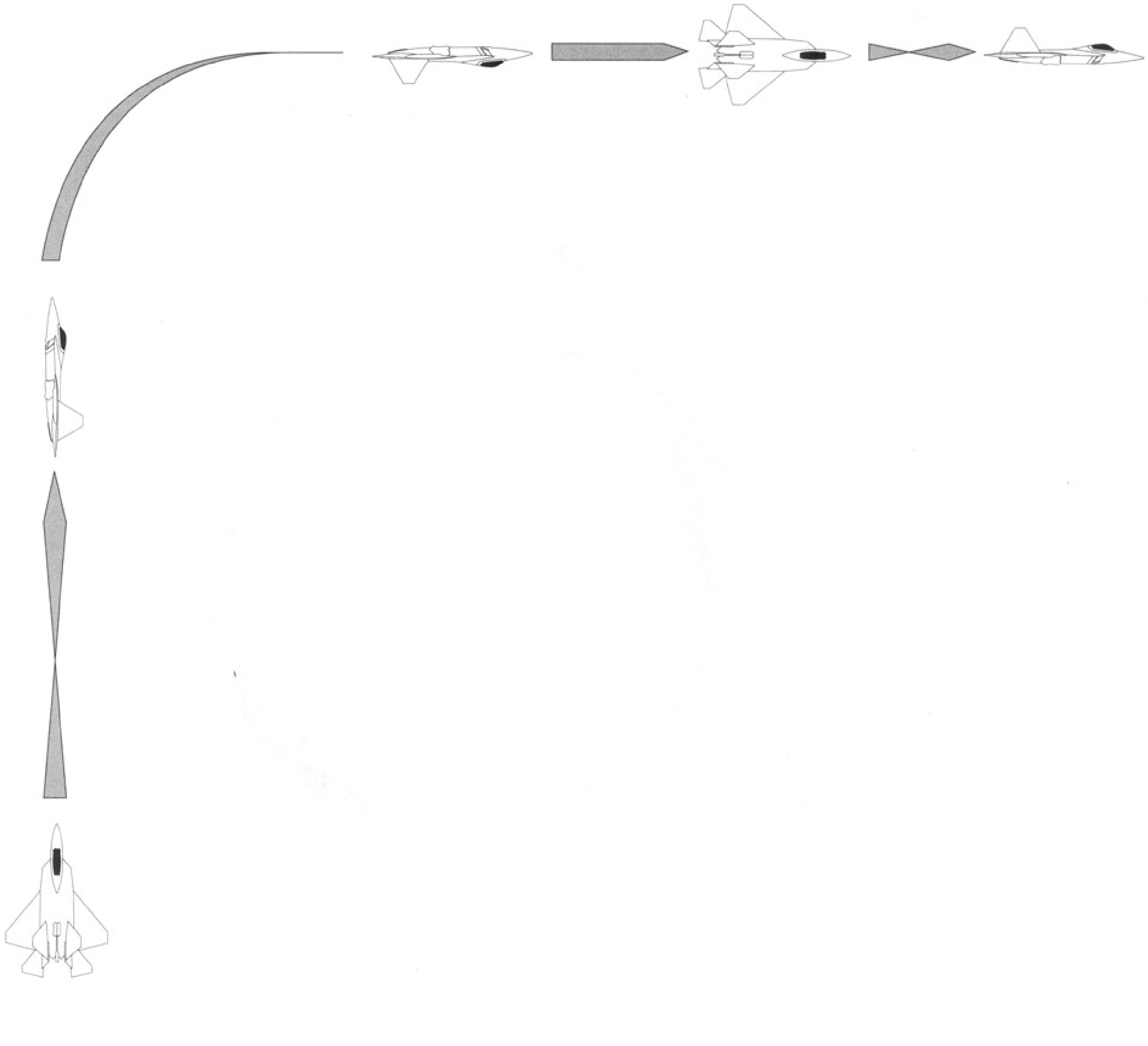
Minimum Altitude: 1,000 feet **Minimum Airspeed:** 450 knots



Immelmann Maneuver

Use the Immelmann Maneuver to make a 90° turn, increase altitude, and reduce speed. To perform the Immelmann Maneuver start off from a straight and level position. Pull the stick all way back until you are completely vertical and pointing straight up. Then push the stick to the right (or left) for a 90° roll. At the desired altitude, pull back on the stick until the aircraft becomes level (although inverted). To complete the maneuver, execute a 180° roll by pushing the stick to the right (or left) until you are straight and level again.

Minimum Altitude: No minimum **Minimum Airspeed:** 415 knots (full ordnance) 320 knots (no ordnance)

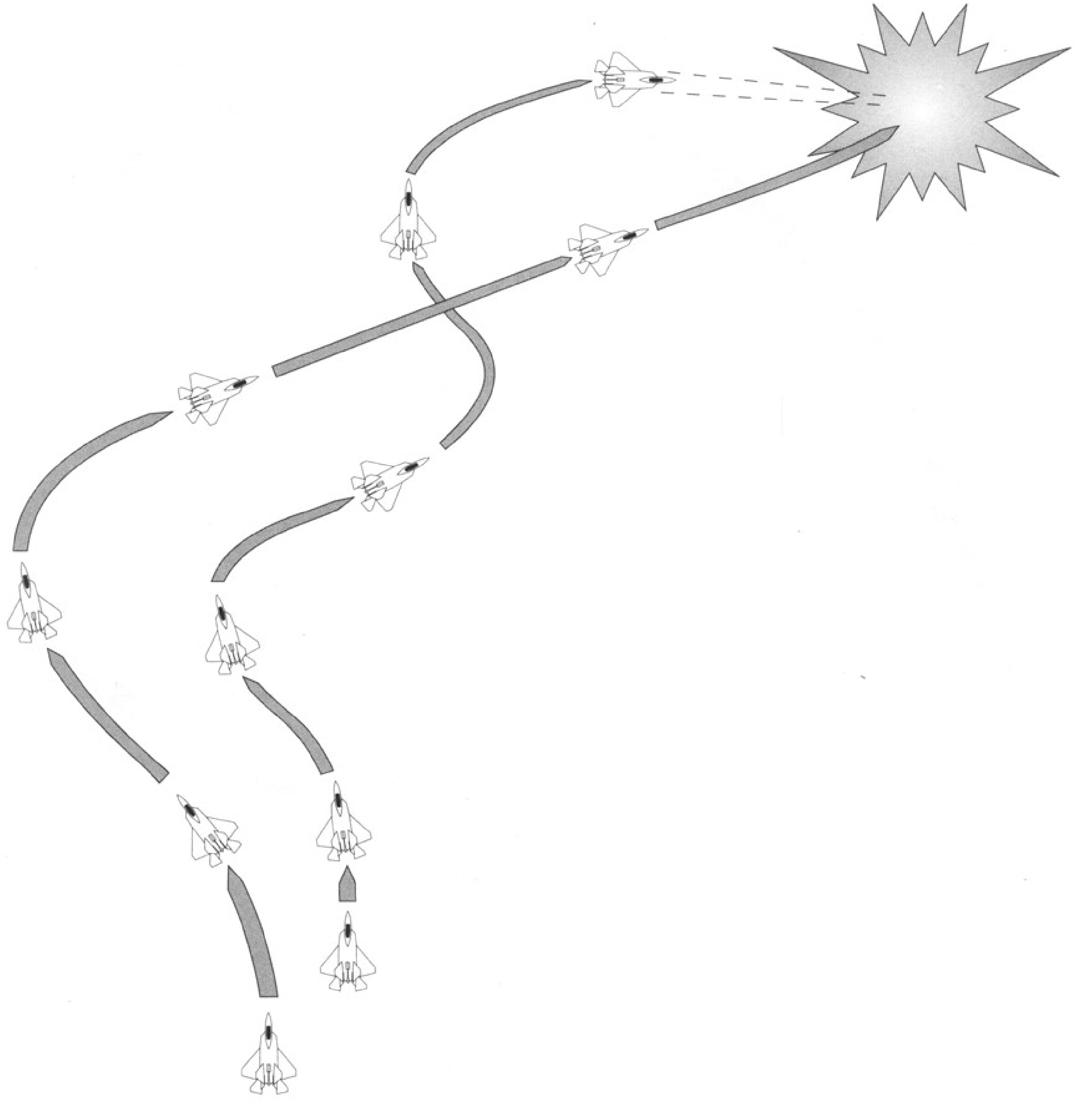


The Scissors

Use the Scissors as a last ditch effort to try and get behind an opposing aircraft. The Scissors is a dangerous series of nose-to-nose turns and overshoots where each aircraft tries to get behind the other. The maneuver can be broken down into a series of "crossing" turns in which each pilot attempts to get his airplane's nose pointed at the enemy. Success in the Scissors usually goes to the slower plane which can make tighter turns.

Note: *Be careful! The Scissors often results in a plane stalling from insufficient thrust.*

Minimum Altitude: No minimum **Minimum Airspeed:** As slow as possible

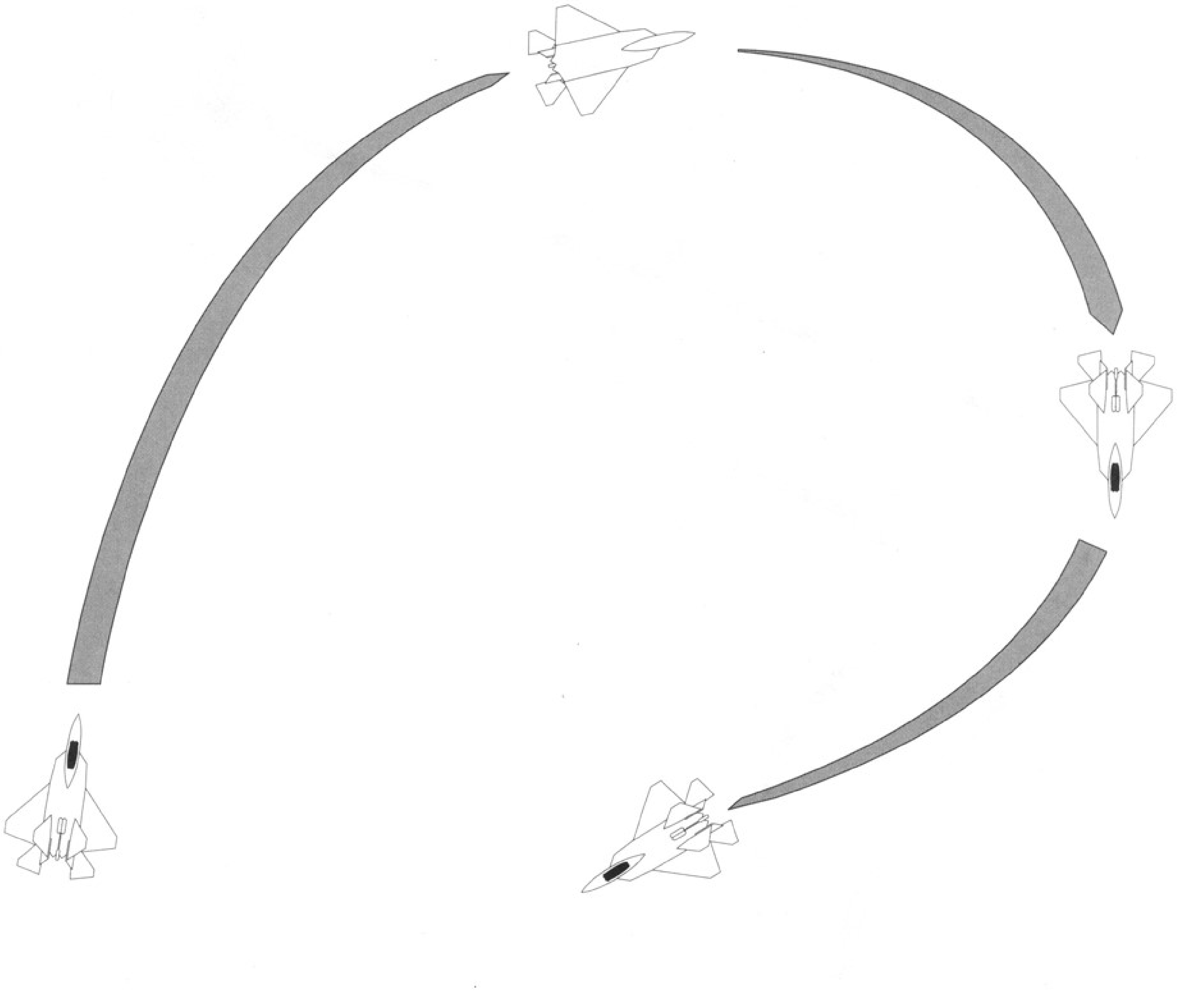


The Split-S

Use the Split-S to quickly change your direction 180°, lose altitude, and increase speed. To perform this Split-S, start off from a straight and level position. Then invert your plane by pulling the stick all the way to the right or left. Next, pull back hard on the stick, causing the plane to dive. Hold the stick until the plane levels out.

Note: *This maneuver will lose considerable altitude, but you will lose less altitude if you keep your airspeed over 350 knots as you enter the dive.*

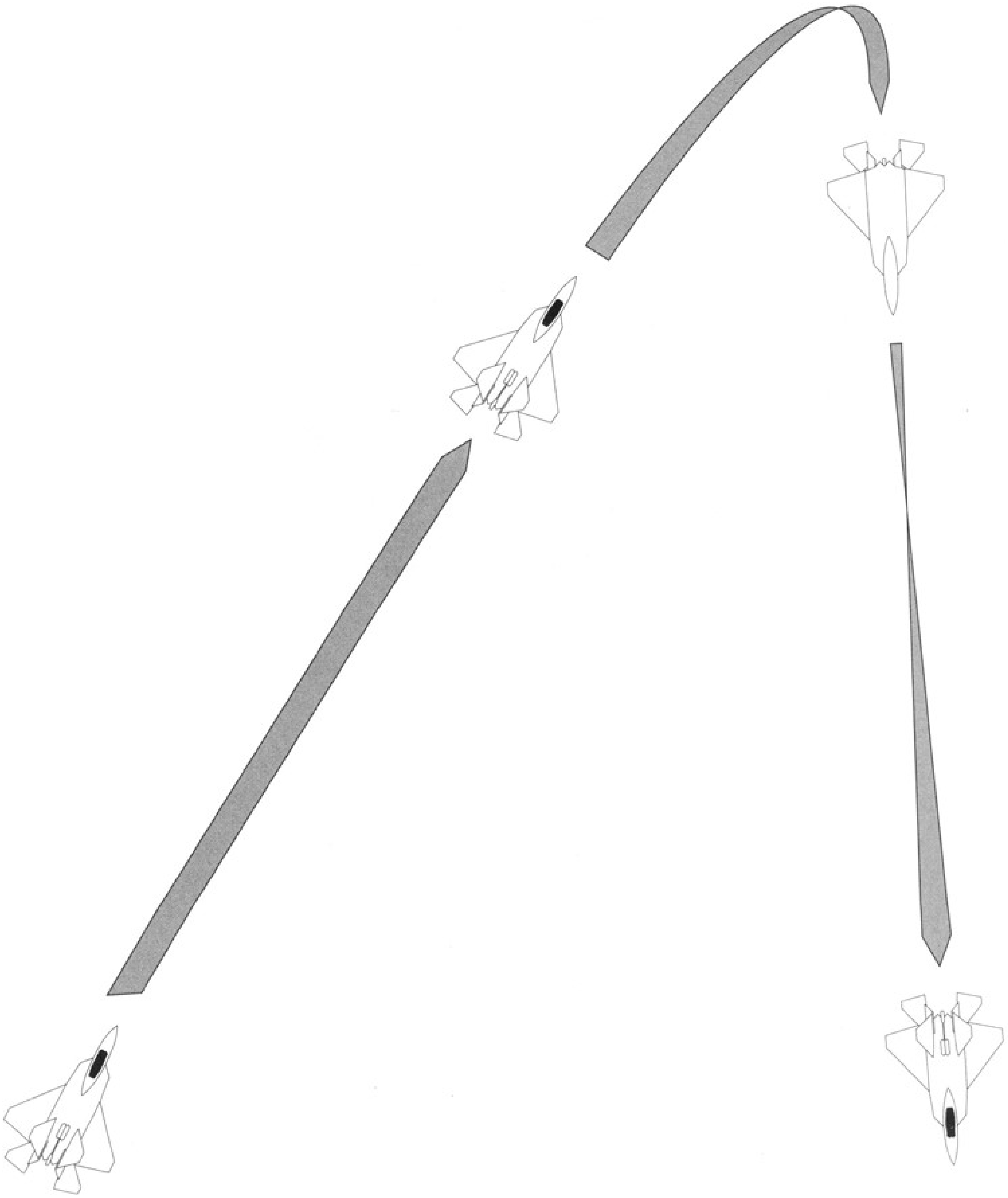
Minimum Altitude: 12,000 feet (full ordnance) 3,500 feet (no ordnance)



Vertical Half-Loop

Use the Vertical Half-Loop to change your direction 180°, increase altitude, and reduce speed. To perform the Vertical Half-Loop start from a straight and level position. Then pull back on the stick all the way. When the plane becomes fully inverted, level out by easing the stick to center. Lastly, roll the aircraft over by pulling the stick to the right (or left).

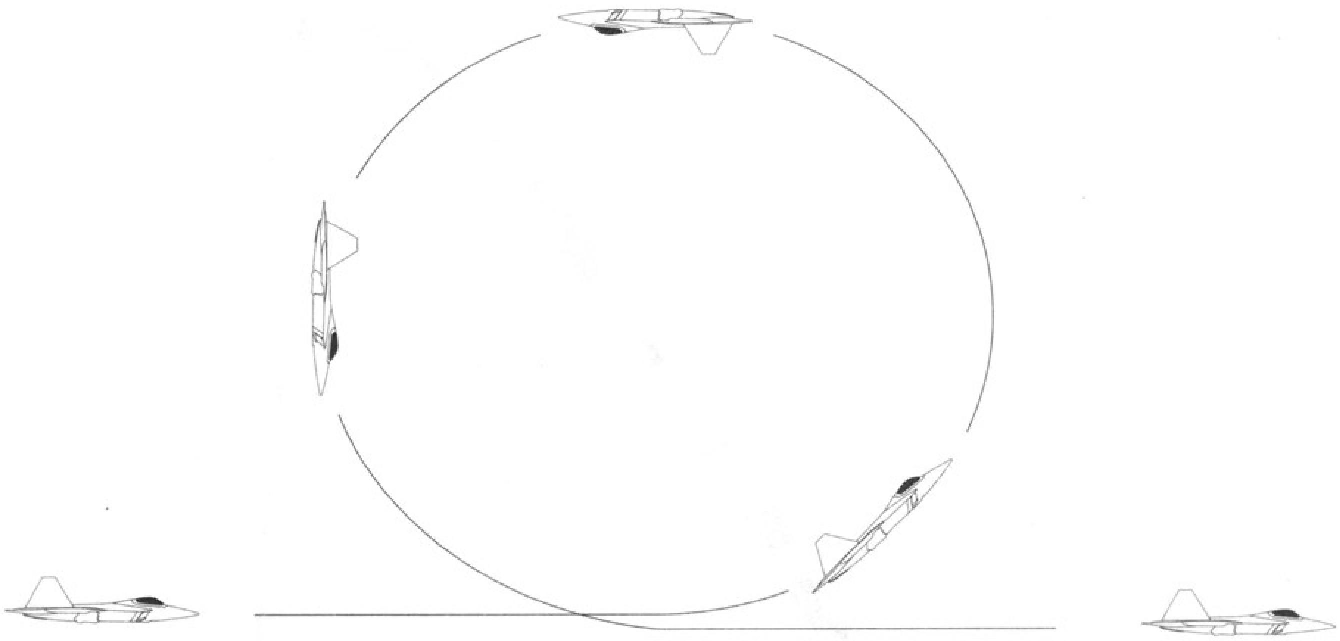
Minimum Altitude: No minimum **Minimum Airspeed:** 415 knots (full ordnance) 320 knots (no ordnance)



Vertical Loop

Use the Vertical Loop to avoid an enemy in your six while trying to get your guns on his tail all in the same maneuver. To perform tl Vertical Loop, start from a straight and level position. Then pull the stick all the way back and hold it as the plane begins to climb aı turn. When you finish the loop ease the stick forward, leveling your plane smoothly.

Minimum Altitude: 2,500 feet **Minimum Airspeed:** 450 knots (full ordnance) 320 knots (no ordnance)

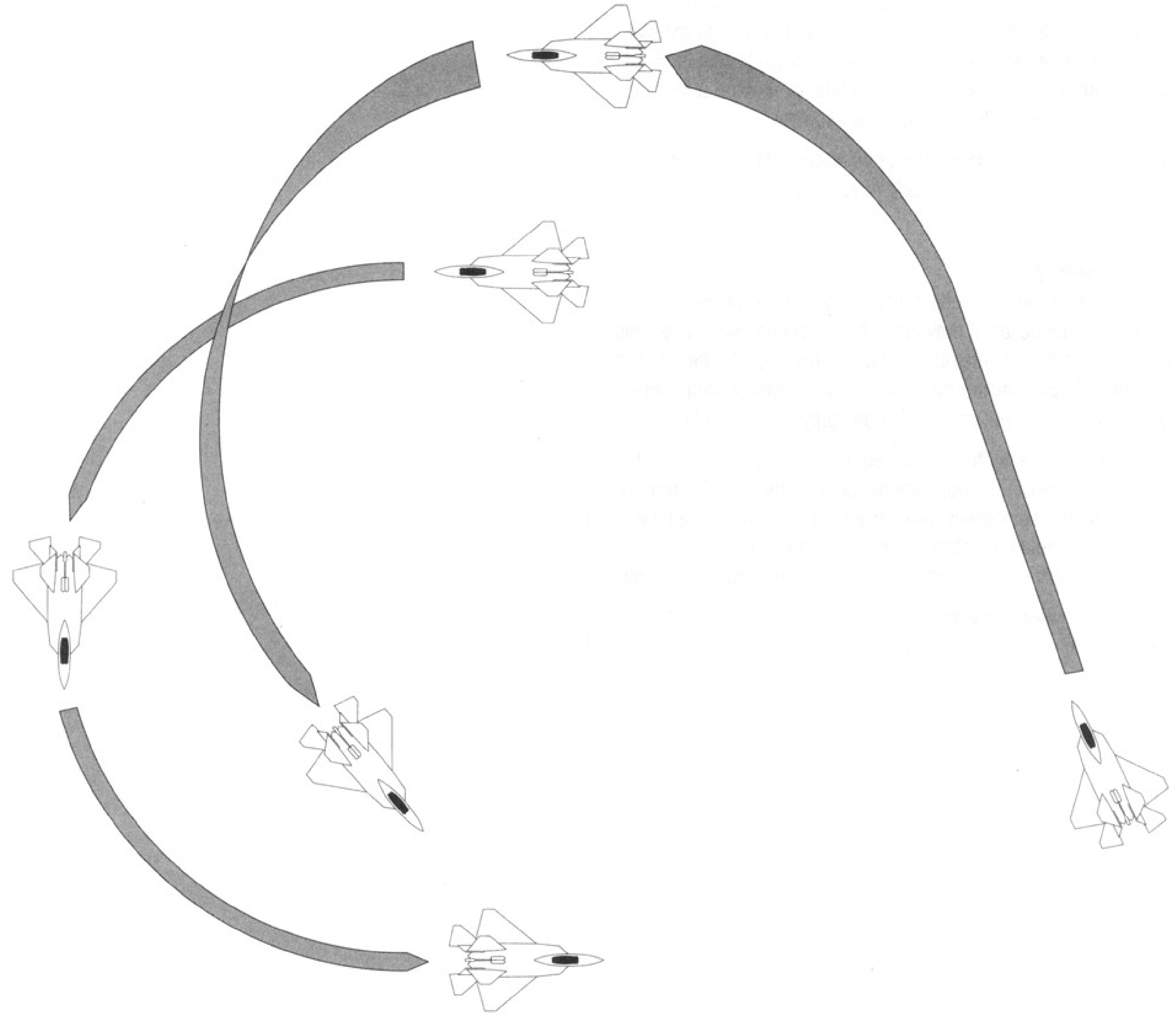


The Yo-Yo

Use the Yo-Yo when you are behind a bandit but are not at the proper angle of attack. To perform the Yo-Yo, watch for the enemy to start breaking to the left (or right). Counter by gently following the direction of the bandit's turn and then pulling back on the stick into a tight turn. When performed correctly, you should still be behind the bandit except that your angle of attack has decreased. To increase your angle of attack, perform the same maneuver except in opposite.

Note: *It is better to use a series of smaller Yo-Yo's than one big one. Larger Yo-Yo's might allow the bandit to escape.*

Minimum Altitude: 2,500 feet (for the low Yo-Yo) **Minimum Airspeed:** 450 knots (full ordnance) 320 knots (no ordnance)



EMERGENCY PROCEDURES

Stall Recovery

An aircraft will stall when it reaches what is called the "critical angle of attack." This generally occurs when the plane is in a very steep climb. It is the result of inadequate lift which causes the plane to literally fall from the sky. This is a very dangerous situation: The plane is out of control and an alert enemy can destroy the helpless fighter. Consequently, quick recovery from a stall is critical.

If your plane has stalled, it will slowly start to fall. Warning bells and lights will also help alert you to the condition. To end the stall, air flow must be restarted. The simplest way to do this is to push the stick forward and let gravity take over. After a second of diving, you should be able to regain control.

Note: *Stalls are extremely dangerous at low altitudes since there may not be enough altitude to recover.*

Spin Recovery

In today's high-performance fighters, spins are rare. However, they can still be deadly if they arise. A spin occurs when one wing goes into a stall while the other wing is providing lift. The result is a downward spiral toward the stalled wing. It usually occurs when a pilot tries to recover from a stall by applying his rudders.

Solving a spin is easy to do, but requires prompt action. Start by feeding rudder in the opposite direction of the spin to stop the rotation. As the spin slows, push the stick forward into a dive. This descent should re-establish the necessary airflow. Remember to start recovery early on since spins lose considerable altitude.

Note: *Do not try to stop spins with the stick. It only worsens the situation.*

Ejection

The ejection seat allows a pilot to safely jettison from a damaged aircraft. It is essentially a lightweight rocket capable of operating at various airspeeds and altitudes.

MISSION TYPES

The primary goal of jetfighters is to establish air superiority over enemy positions. Although it may seem obvious, air superiority is critical to a successful campaign. It provides better intelligence (while hampering enemy intelligence) and protects friendly ground units (while exposing enemy positions). In particular, the control of airspace during an engagement allows close air support, strategic and tactical bombing, reconnaissance and position reinforcement. This section examines the value of fighters in the military, concentrating on their various roles.

Fighter Sweeps

A fighter sweep is a mission that is flown over contested territory for the purpose of destroying enemy aircraft. The classic situation is an limited offensive patrol over enemy lines, expressly searching for a fight. Any airborne aircraft is a valid target, but reconnaissance and supply planes are usually the most lucrative.

Fighter sweeps generally include two elements: high cover and low attack. The low attack planes focus on destroying targets near the ground while high cover fighters provide defensive protection. Cover may engage enemy fighters as well as reconnoiter enemy positions.

The targets of fighter sweeps are unlimited. Enemy air bases often make good targets (assuming that the low-level fighters carry some kind of ATG ordnance). Sweeps are also effective against reconnaissance aircraft like the AWAC. For the most part, however, the main goal is usually other fighters.

Because fighter sweeps usually take place over enemy positions, pilots have to be prepared for stiff resistance. As the result, sweeps have adopted "slash and dash" attacks (also known as hit-and-run). This approach requires the attacking planes to dive at high speed, attack the target, and then quickly disengage. It is not as exciting as a protracted engagement, but it does minimizes the fighter's exposure. Alternatively, pilots sometimes use tricks to draw out enemy fighters away from their fortified defenses. A classic example is flying the fighter sweep like a formation of bombers. If executed properly, this ruse will result in a nasty surprise for the bogeys.

Point/Area Defense

In contrast to fighter sweeps which are purely offensive, point/area defense is a protective posture. It is often used to safeguard valuable fixed assets like an air base, military compound or other structures. Pilots generally disfavor point/area defense orders since they are more tedious. However, they are essential in preventing enemy air strikes. Unlike fixed anti-aircraft weapons, jetfighters are more versatile. They can move quickly to counter a threat that is still far away from the intended target.

Point/area defense is classified into either combat air patrol ("CAP") or ground-alert interception ("GAI"). CAP is a constant air patrol over or near a valuable target. It's primary goal is to intercept incoming threats before they are close to the target. By contrast, GAI is a wing of fighters waiting on the ground, ready to scramble into combat. GAI is typically less costly than CAP, but it offers a much slower response time. As the result, military theory recommends the use of both CAP and GAI elements when possible.

Note: *CAP is always preferred when the enemy is believed to possess long-range stand-off weapons such as cruise missiles.*

Protecting the target is the greatest priority of any point/area defense. It is not always as important to destroy the incoming bombers. In this case, a "kill" can be achieved by forcing an incoming bomber to jettison its ordnance early or by turning back the attack. (Of course, destroying the threat is the only sure way to keep it from returning the following day!)

When attacking a formation of bombers, there are several things to consider. First, watch for an escort. In most cases, a group of fighters will be flying cover nearby. If the formation is still far away from the target, you can try engaging the fighters first. This tactic will weaken the escort and may cause the bombers to abort the mission. But be careful. Many inexperienced pilots tend to forget the objective of point/area defense when they get involved in a big furball. Second, attack the bombers as soon as possible. By pressuring them early, you may discover a weakness. For example, many bombers are well defended in the rear, but are susceptible to head-on attacks. Third, exploit any weaknesses. If you see one aircraft which is more hesitant or unstable, attack that plane first. You will probably be able to destroy it easier. A "fast kill" is important because it will dramatically lower the rest of the formation's morale.

Strike Escort

Many pilots feel that strike escorts are the most difficult kinds of missions to fly. They have the danger of fighter sweeps and the logistical problems of point/area defense. In fact, strike escorts have often been described as a sort of sweeping or "mobile" point/area defense. As such, the escort is responsible for securing the airspace around a friendly transport, bomber or other aircraft. This difficult assignment is complicated by the fact that the asset is often traveling in enemy airspace.

There are three types of escorts: remote, detached, and reception. A remote escort is essentially a fighter sweep which precedes the bombers. Flying ahead of the formation, its job is to clear out all enemy CAP and SAM positions. This assignment can be a difficult job since the target is usually a valuable asset with heavy defenses. After the path has been secured, the remote escort may then be divided into separate elements to fly patrols near the strike zone. They are then ordered to intercept any incoming bogeys.

A detached escort is comprised of several pairs of fighters stationed around the formation. They fly far enough away from the main body that they will be able to engage any offensive threat before it reaches the formation. This escort act as an early-warning system for the strike force, reporting enemy movements. They are obligated to stay with the strike force and cannot leave their positions except to respond to an attack. Conversely, they are required to return to the formation as soon as the threat turns away.

Note: *Pilots flying a detached escort must hold their positions in order to protect the more valuable strike force.*

After an attack, the strike force will be running low on fuel and weapons. At this stage they are very susceptible to attack. A reception escort is used to provide fresh cover to protect these returning aircraft. They begin by performing a sweep of the exit corridor, checking for enemy positions. This is then followed by a CAP around the corridor. While the strike force returns, the reception escort keeps an eye out for pursuing enemy aircraft. They are to engage these bogeys whenever necessary to protect the formation. This function is often performed by GAI units that were left behind to defense the point of operations.

AIRCRAFT AND WEAPONS

The following section covers the majority of the aircraft and weapons which may appear in JetFighter III series of products. Because of security reasons, this information is highly reliable but not completely accurate. Pilots should familiarize themselves with this data. It could save your life. For convenience, this section is broken up into five categories: USAF, USN, Russian, Other, and Weapons. Each is discussed below.

Note: The illustrations are not drawn to scale.

USAF AIRCRAFT

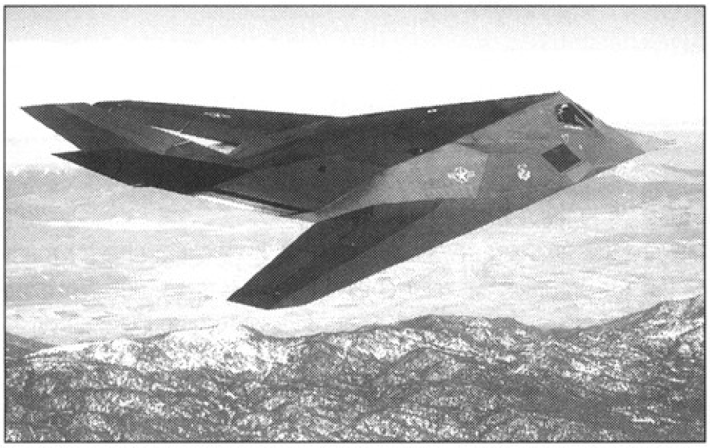
FIGHTERS

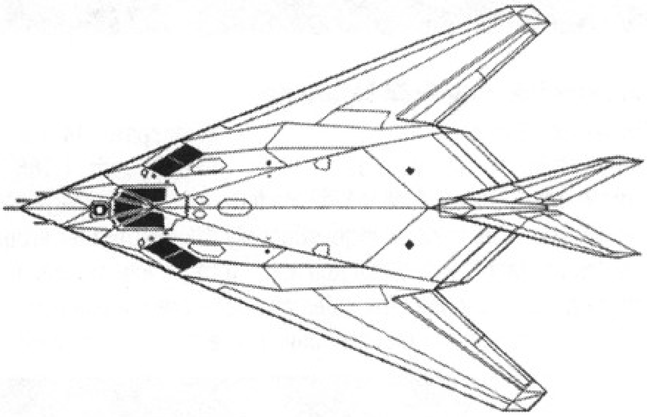
Lockheed F-117 Night Hawk

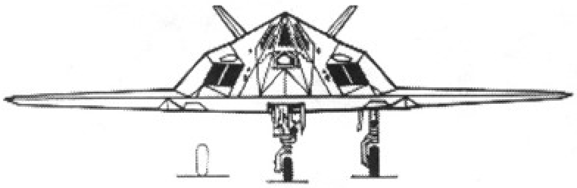
Nickname: Black Jet	**Wingspan:** 43 feet	**Length:** 66 feet
Max Weight: 52,500 pounds	**Max Speed:** 645 mph	**Max Range:** 575 miles with 4,000 lbs. payload

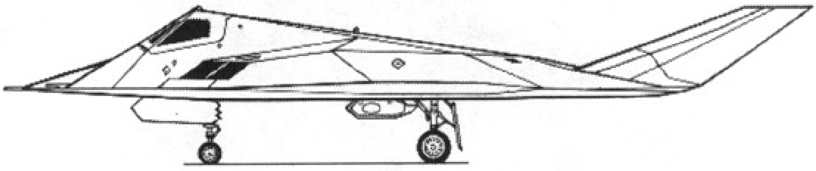
Armament: Internal bays for two 2,000 lbs. bombs and other weapons

Description: The F-117 was the first "stealth fighter." It has a blended body, sharply swept wings, V-tail, grids to block radar waves from the inlets, and slits for the exhausts. Experts claim that it has the radar image of an insect. The F-117 is easy to fly with its fly-by-wire controls, but it is not an agile fighter. It has marginal power even on take-off, and its near-delta wing is not very efficient at low speeds.









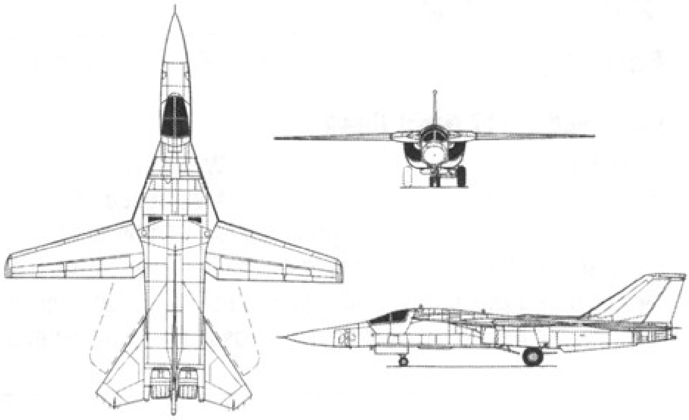
Lockheed F-111 Raven

Nickname: Aardvark **Wingspan:** 63 feet **Length:** 73 feet

Max Weight: 100,000 pounds **Max Speed:** 1,320 mph **Max Range:** 700 miles with 4,000 lbs. payload

Armament: AIM-9 Sidewinders, AGM-130 stand-off missiles, GBU-10, GBU-15, GBU-24, and internal bay for two 2,000 lbs. bombs

Description: The F-111 is an all-weather tactical bomber which can fly supersonic at high and low altitudes. With its wings swept back, Ravens are safe and stable at low levels, making it a perfect bombing platform. But once its bombs are dropped, F-111s can sprint away at Mach 1.4. Because of these attributes, Ravens dropped more laser-guided bombs in Desert Storm than any other aircraft.



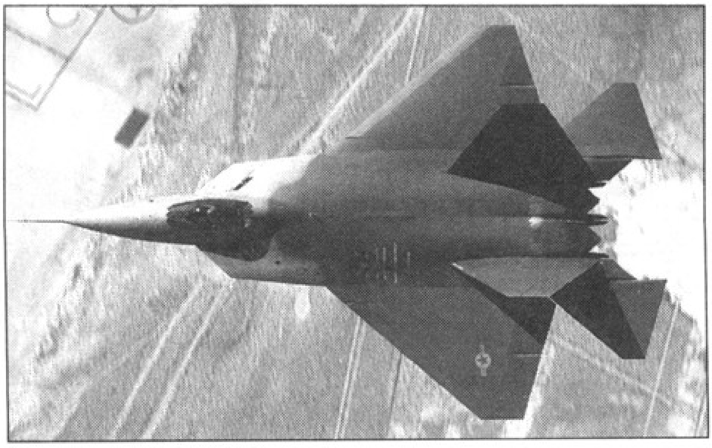
Lockheed/Boeing F-22 Lightning II

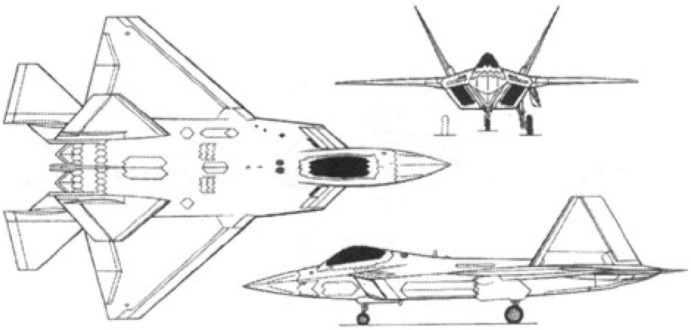
Nickname: None **Wingspan:** 44 feet **Length:** 63 feet

Max Weight: 65,000 pounds **Max Speed:** 1,188 mph **Max Range:** 900+ miles

Armament: Cannon, AIM-9 Sidewinders, AIM-120C AMRAAMs, or four 1,000 lbs. GBU-30 bombs

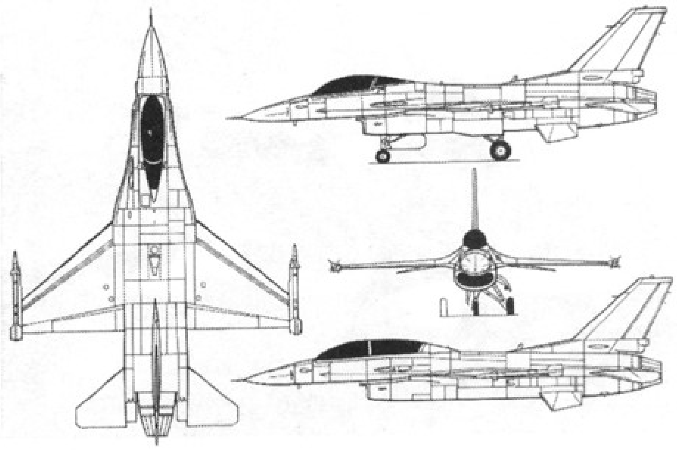
Description: The F-22 is unquestionably the best fighter around. It is stealthy, fast, and maneuverable. The F-22 can cruise for many minutes at Mach 1.4 and still pull a 6 G turn. At low speeds, its thrust vectoring engines give a tremendous boost in control, providing lightning fast response. The sides and edges of the plane are also contoured, aligned and coated with radar-absorbing material (or "RAM") to reduce its radar reflectivity. The result is every MiG's worst nightmare.





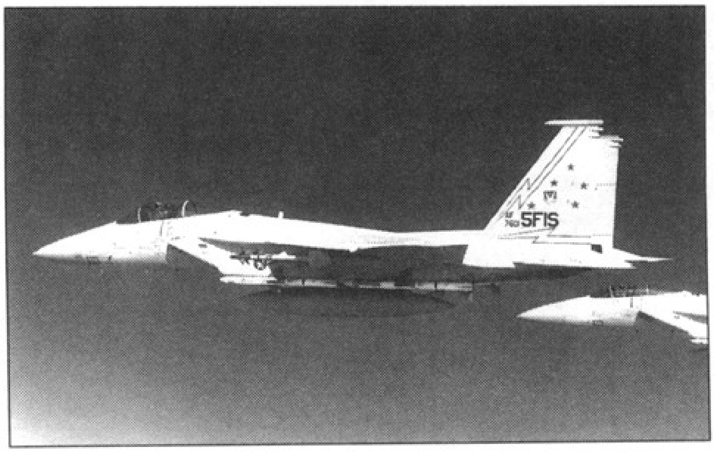
Lockheed F-16 Fighting Falcon

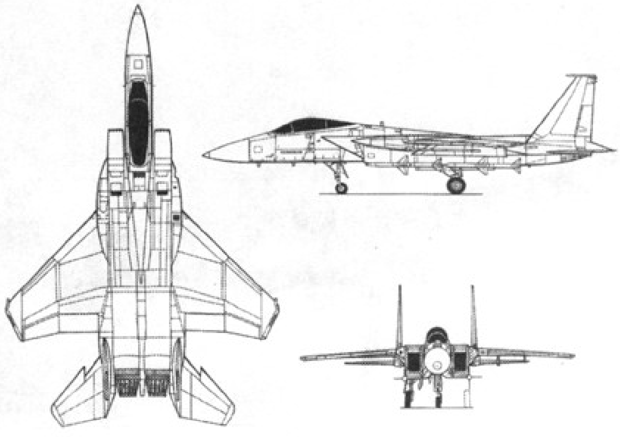
Nickname: Viper **Wingspan:** 31 feet **Length:** 49 feet
Max Weight: 42,300 pounds **Max Speed:** 1,320 mph **Max Range:** 575 miles
Armament: Cannon, AIM-9 Sidewinders, AIM-120 AMRAAMs, AIM-7 Sparrows, AGM-65 Mavericks, GBU-10 laser-guided bombs, and Penguin anti-ship missiles
Description: The F-16 is one of the best fighters around with a combat record of 80 to 0. In the Gulf War, they flew 13,500 sorties—more than any other US fighter. Its strong points are its simplicity, maneuverability, power, and excellent acceleration. Because of its small size, a Fighting Falcon's speed, range and handling suffer when carrying heavy external loads.



McDonnell Douglas F-15 Eagle

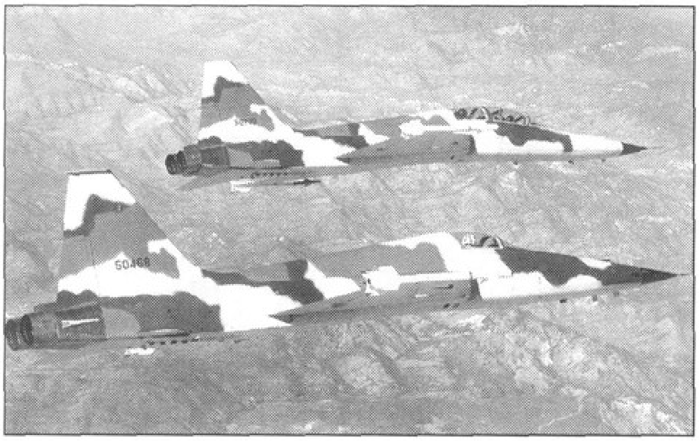
Nickname: Ego **Wingspan:** 43 feet **Length:** 64 feet
Max Weight: 81,000 pounds **Max Speed:** 1,600 mph **Max Range:** 600 miles
Armament: Cannon, AIM-7 Sparrows, AIM-9 Sidewinders, AIM-120 AMRAAMs, AGM-130 Standoffs,GBU-15, GBU-28, CBU-87 and Mk82 bombs
Description: The F-15 is a pilot's dream. Sporting glass-cockpit displays, fly-by-wire flight control and modified CFTs, the Eagle is perhaps the most deadly aircraft ever made. No fighter has matched its 90 to 0 kill ratio. The F-15's range, endurance and radar allow its pilots to fly deep into hostile airspace, track their adversaries and attack them when they choose.

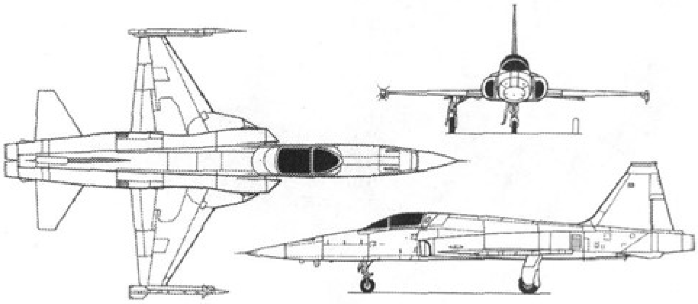




Northrop Grumman F-5 Tiger II

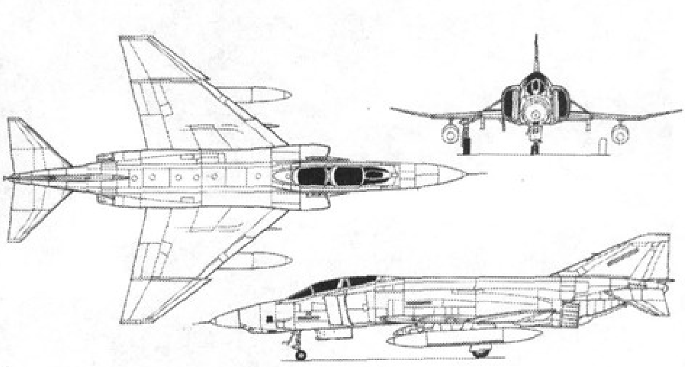
Nickname: None **Wingspan:** 27 feet **Length:** 48 feet
Max Weight: 24,664 pounds **Max Speed:** 1,080 mph **Max Range:** 400 miles
Armament: Cannon, AIM-9 Sidewinders, AGM-65 Mavericks, and GBU-10 bombs
Description: The F-5 is a versatile, light weight fighter. Although few of them are in service in the US, they remain very popular in the export market. Many nations (including Chile and Singapore) have modernized their Tigers with new radars, redesigned cockpits and other changes. The F-5 has not seen much combat. However, many US pilots have fought against F-5Es because the Air Force and Navy used it as an "adversary" fighter flown by instructors trained in Soviet tactics.





McDonnell Douglas F-4 Phantom II

Nickname: Wild Weasel **Wingspan:** 38 feet **Length:** 63 feet
Max Weight: 61,800 pounds **Max Speed:** 1,430 mph **Max Range:** 600 miles
Armament: Cannon, AIM-7 Sparrows, AIM-9 Sidewinders, AGM-65 Mavericks, Popeyes and GBU-10 laser-guided bombs
Description: The Phantom is a classic heavyweight fighter, sporting a cranked wing, massive engine intakes and drooped horizontal stabilizer. It is the only aircraft to simultaneously hold the world records for maximum speed at high and low altitude, as well as absolute and sustained altitude. It is a fast, rugged, and reliable plane which can carry a heavy external load without a great loss in speed or range. However, F-4s come up short against the modern fighters' acceleration, maneuverability and cockpits.



Boeing B-52 Stratofortress

Nickname: The Buff **Wingspan:** 185 feet **Length:** 157 feet
Max Weight: 505,500 pounds **Max Speed:** 630 mph **Max Range:** 10,100 miles

Armament: Cannon and an internal bay for over 35,000 lbs. of ordinance, including AGM-86C cruise missiles, AGM-84 Harpoon missiles, and AGM-142 Have Nap missiles.

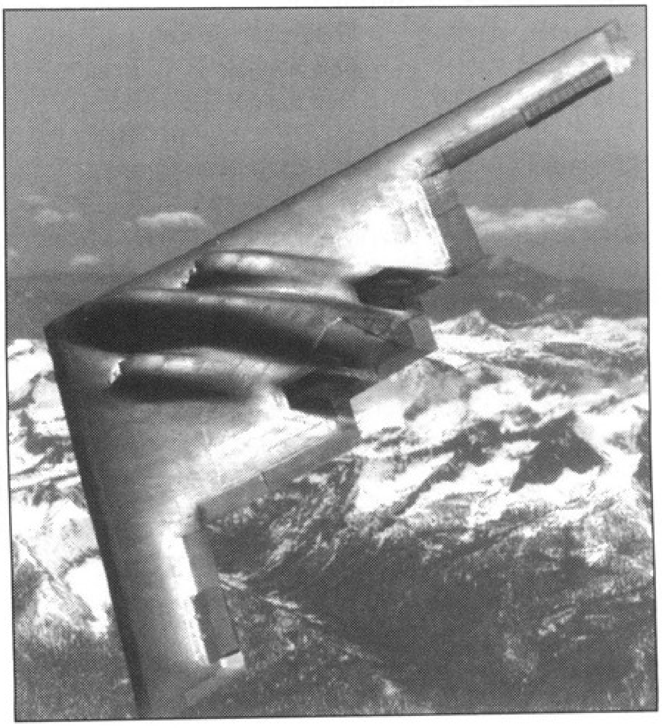
Description: The Stratofortress is the heaviest and most costly combat aircraft ever built. Basically a long-range bomber, the B-52 has new navigation and weapon-delivery systems, low-light-level TV and infrared sensors, and sophisticated radar jammers. They can be armed with either nuclear or conventional weapons. The Stratofortress is the only USAF bombers to carry precision-guided weapons.

Boeing B-2 Spirit

Nickname: None **Wingspan:** 172 feet
Length: 69 feet **Max Weight:** 373,000 pounds
Max Speed: 550 mph **Max Range:** 5,500 miles with 40,000 lbs. payload

Armament: Two internal bays for 50,000 lbs. of ordinance

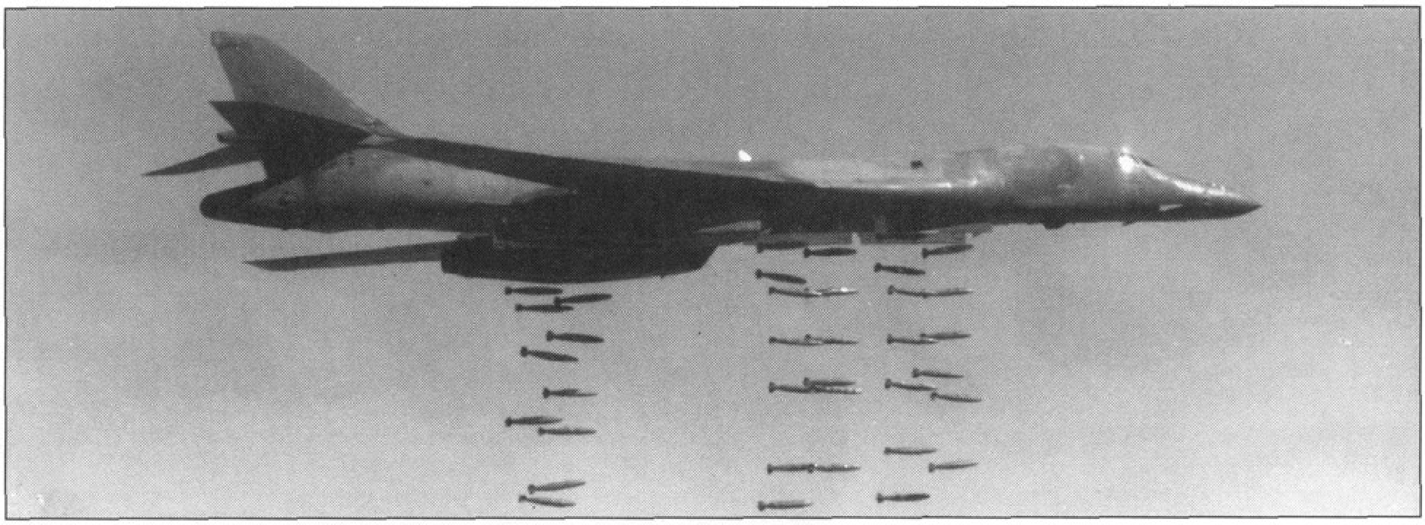
Description: Unlike other bombers, the B-2 is a pure flying wing made from titanium beams and carbonfiber. The aircraft's unique fly-by-wire control system includes elevons for pitch and roll control, and split rudder/speedbrakes at the wingtips. As the result, the B-2 is fairly maneuverable for a large plane. Nevertheless, it has the dubious distinction of being the world's most expensive combat aircraft.



Boeing B-1B Lancer

Nickname: The Bone
Wingspan: 137 feet
Length: 147 feet
Max Weight: 477,000 pounds
Max Speed: 825 mph
Max Range: 5,000 miles with 30,000 lbs. payload
Armament: Three internal bays for 48,000 lbs. of ordinance

Description: Over twenty-five years in development, the B1-B is still not operational with most offensive weapons. This bomber was originally intended to carry nuclear weapons, but it was changed to long-range conventional weapons. The B-1B is fast and smooth because of its small wing area and a ride-control system. However, it cruises at less than 25,000 feet (two miles below most commercial jets) when it is fully loaded.

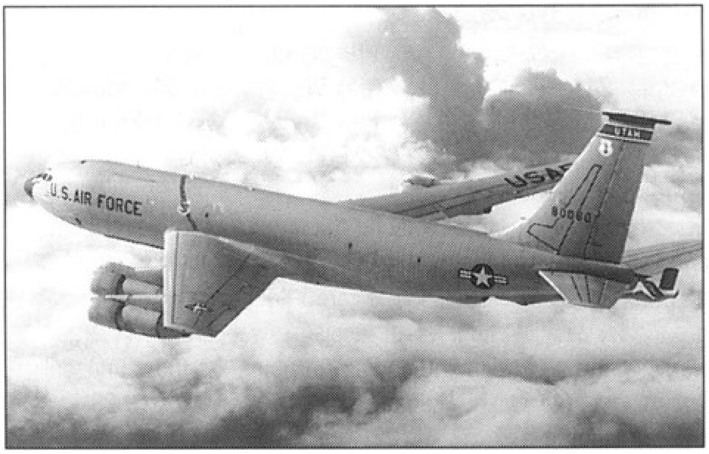


Fairchild A-10 Thunderbolt II

Nickname: Warthog
Wingspan: 57 feet
Length: 54 feet
Max Weight: 50,000 pounds
Max Speed: 440 mph
Max Range: 290 miles at low altitude
Armament: GAU-8/A 30 mm, seven barrel Gatling cannon, AGM-65 Maverick missiles, cluster or conventional bombs.

Description: The A-10 was designed to provide close air support, especially against enemy tanks. As the result, the fuselage is molded around an immense GAU-8/A cannon which fires armor-piercing projectiles at a peak rate of 4,200 shots per minute. Its primary defensive maneuver is the Warthog Stomp or a rapid turn into an attacker's face followed by a deadly close-range blast from its Gatling cannon.

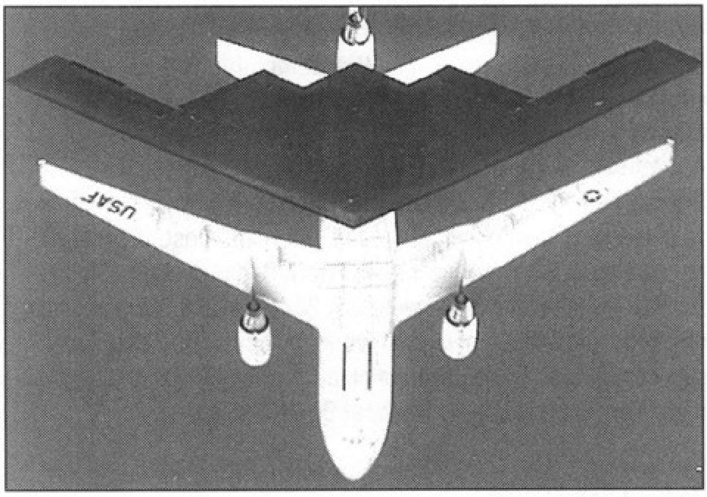
Boeing KC-135 Stratotanker



Nickname: None
Wingspan: 131 feet
Length: 136 feet
Max Weight: 325,300 pounds
Max Speed: 600 mph
Max Range: 8,000 miles
Armament: None

Description: The unglamorous KC-135's refueling capabilities make it is one of the most important aircraft in the USAF. It uses a rigid telescoping tube (or "flying boom") that pivots under the Stratotanker's tail to fuel the aircraft. Because it could transfer fuel faster than a hose, the boom was a better way of refueling bombers. During refueling, the operator (or "boomer") steers the boom into a slipway on the receiver aircraft, using a joystick connected to a V-shaped pair of fins on the boom.

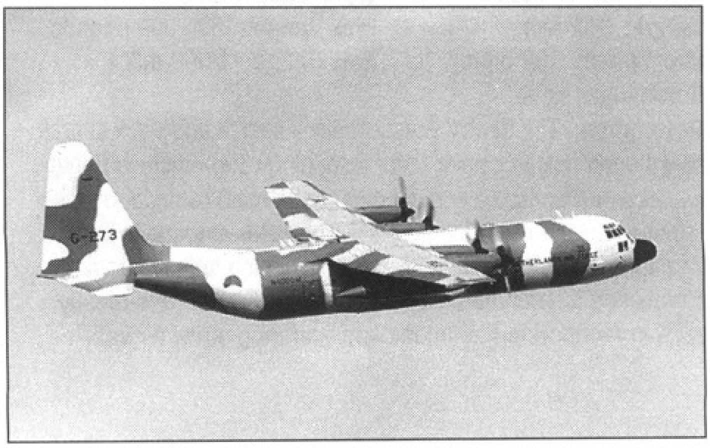
Boeing KC-10 Extender



Nickname: Toad
Wingspan: 165 feet
Length: 182 feet
Max Weight: 590,000 pounds
Max Speed: 590 mph
Max Range: 4,370 miles with 169,00 lbs. payload
Armament: None

Description: The KC-10 tanker is an essential link in refueling cargo aircraft. Based on the DC-10-30, the Extender has a fly-by-wire flying boom, operator's station in the rear fuselage, and hose-reel system. Its ability to transfer 200,000 pounds of fuel makes it better suited to refueling large aircraft such as the C-5 than the smaller KC-135.

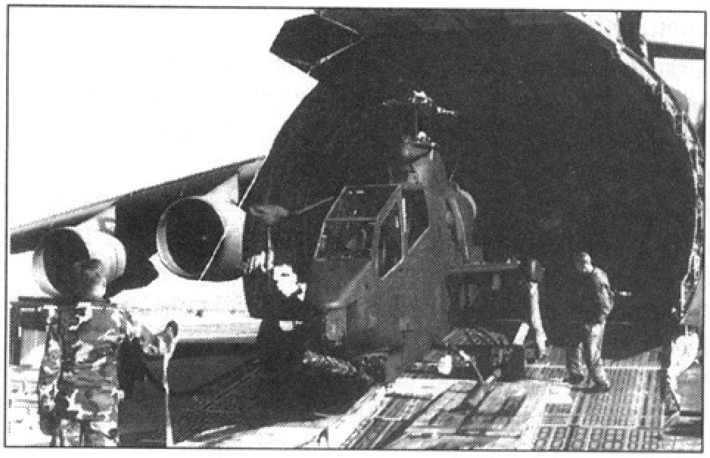
Lockheed C-130 Hercules



Nickname: Herk
Wingspan: 132 feet
Length: 97 feet
Max Weight: 155,000 pounds
Max Speed: 386 mph
Max Range: 2,350 miles with 42,700 lbs. payload
Armament: 105 mm Light Howitzer, 40 mm Bofors gun, and 25 mm five-barrel GAU-12/U Gatling cannon.

Description: Military users were quick to realize that the Hercules is as versatile as a truck. The C-130 can be equipped to snoop on electronic signals, drop bombs or recover payloads from the ground. In particular, the new AC-130U gunship has a modified F-15E radar, second-generation infrared sights and 25 mm GAU-12/U cannon.

Lockheed C-5 Galaxy



Nickname: Big Mac
Length: 248 feet
Max Speed: 570 mph
Wingspan: 222 feet
Max Weight: 837,000 pounds
Max Range: 3,750 miles with 221,000 lbs. payload
Armament: None

Description: The Galaxy is by far the largest aircraft ever built and is able to carry almost any vehicle. It resembles other jet freighters in many respects. The cargo floor is close to the ground for easy loading. Its aft fuselage sweeps up with large clamshell doors for loading and air-dropping. Its more unusual features include a visor-like nose door and complicated 28-wheel landing gear.

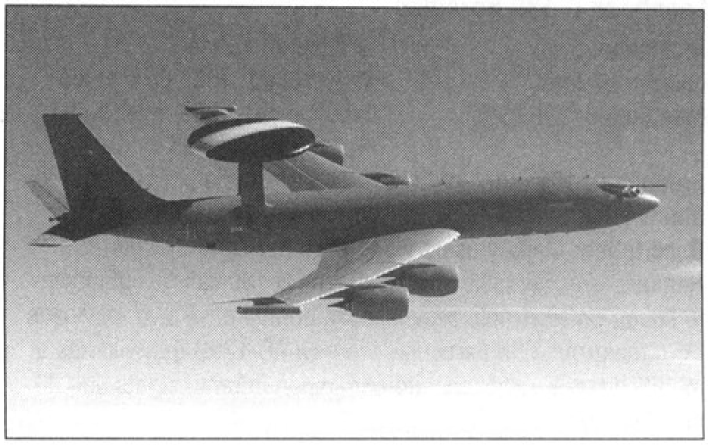
Boeing/Northrop Grumman E-8 Joint STARS

U.S. AIR FORCE

Nickname: None
Length: 153 feet
Max Speed: 530 mph
Wingspan: 146 feet
Max Weight: 325,000 pounds
Max Range: 1,000 miles
Armament: None

Description: The E-8 is a converted Boeing 707 which functions as a self-contained observation and command post. It contains the new Joint Surveillance Target Attack Radar System ("Joint STARS"). The radar's centerpiece is a 24 foot side-looking antenna mounted under the fuselage. It works by comparing data from successive radar pulses and matching moving objects to a digital map. The range is limited to about 80-100 miles.

Boeing E-3 Sentry



Nickname: AWACS
Length: 153 feet
Max Speed: 530 mph
Wingspan: 145 feet
Max Weight: 325,000 pounds
Max Range: 1,000 miles
Armament: None.

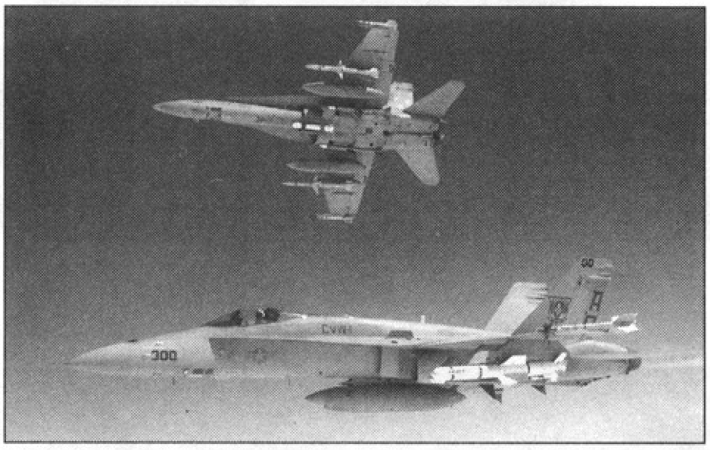
Description: The Sentry is essentially a search and track aircraft based upon pulse-Doppler radar technology. High-tech computers and operator consoles occupy most of its main cabin, and power supplies for the radar fill the belly. The radar antenna is built into a 22 foot wide disc or "rotodome" which spins constantly, completing a revolution every 10 seconds. The E-3 is mostly used in monitoring operations and vectoring strike aircraft.

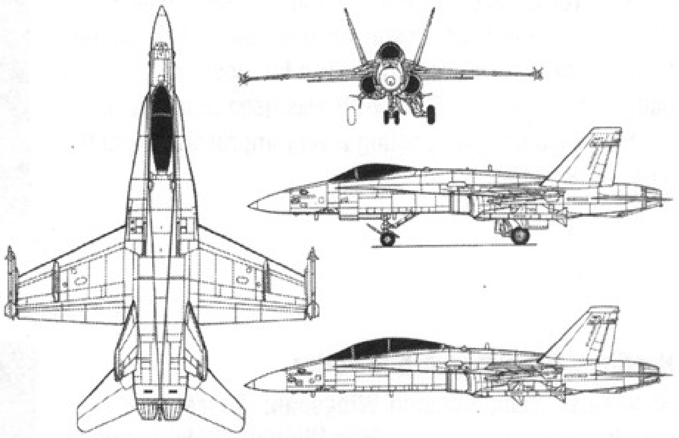
USN AIRCRAFT

FIGHTERS

McDonnell Douglas F/A-18 Hornet

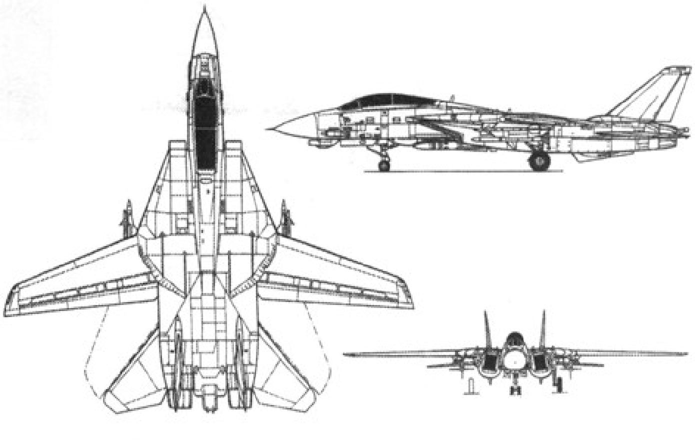
Nickname: Bug **Wingspan:** 37 feet **Length:** 56 feet
Max Weight: 49,200 pounds **Max Speed:** 1,200 mph **Max Range:** 320 miles
Armament: Cannon, AIM-9 Sidewinders, AIM-120 AMRAAMs, AIM-7 Sparrows, AGM-65 Mavericks, GBU-10 laser-guided bombs, AGM-84 Harpoon, and AGM-88 HARM.
Description: The F/A-18 was a radical plane when it was introduced. It was the first fighter to have carbonfiber wing skins, digital fly-by-wire flight controls, and a new cockpit with CRTs and pushbuttons. The Hornet is a highly maneuverable fighter with an excellent cockpit view. It has fewer limits than the F-16 and carries large loads better. The Hornet's engines are reliable and responsive. The Hornet's only serious handling quirk is that it can be tricky to land and take-off, particularly in crosswinds.





Northrop Grumman F-14 Tomcat

Nickname: Turkey **Wingspan:** 64 feet **Length:** 63 feet
Max Weight: 74,330 pounds **Max Speed:** 1,544 mph **Max Range:** 600 miles
Armament: Cannon, AIM-9 Sidewinders, AIM-120 AMRAAMs, AIM-7 Sparrows, AIM-54 Phoenix missiles, and up to 20 Mk82 bombs.
Description: Star of the movie Top Gun, the F-14 was a bold and startling aircraft. It had a large variable-sweep wing which moved automatically according to speed and flight conditions. The engines were set far apart, blending with the fuselage into a single broad body, and the canopy was set high up on the forward fuselage for the best possible view. The F-14s have successfully destroyed Libyan Sukhoi Su-22s and MiG-23s in combat.



McDonnell Douglas / Bristish Aerospace AV-8 Harrier II

Nickname: None
Wingspan: 30 feet
Length: 46 feet
Max Weight: 31,000 pounds
Max Speed: 645 mph
Max Range: 500 miles with 3,500 lbs. payload

Armament: Cannon, AIM-9 Sidewinders, AIM-120 AMRAAMs, AGM-65E Maverick missiles, and GBU-10 laser-guided bombs.

Description: The AV-8B is perhaps one of the most unique aircraft ever built. Called a "short-take-off, vertical landing" (or STOVL) aircraft, the Harrier needs only a fraction of the normal runway for operations. This unique feature makes it an excellent choice for close-support and bad weather sorties. The AV-8B was used regularly during the Falklands War, posting a very impressive 29 to 0 air-to-air kill ratio.

Northrop Grumman A-6 Intruder

Nickname: Station Wagon
Wingspan: 53 feet
Length: 55 feet
Max Weight: 58,600 pounds
Max Speed: 640 mph
Max Range: 550 miles

Armament: GBU-10 laser-guided bombs, AGM-84 Harpoon, and SLAM missiles

Description: The A-6 was specifically designed as a close air support aircraft which could fight at night or in bad weather. Its strong points include a good view, range and endurance. On the down side, it is not fast and does not have much power for evasive maneuvering. The A-6's vulnerability to ground fire has also been a concern.

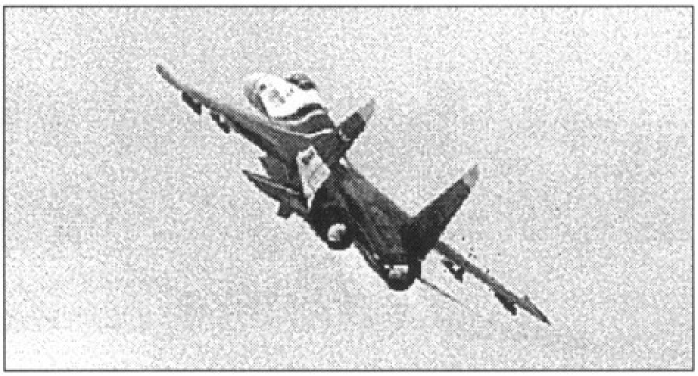
RUSSIAN AIRCRAFT

FIGHTERS

Sukhoi Su-27/35

Nickname: Flanker, Crane **Wingspan:** 48 feet
Length: 72 feet **Max Weight:** 72,750 pounds
Max Speed: 1,560 mph **Max Range:** 930 miles
Armament: Cannon and AAMs.

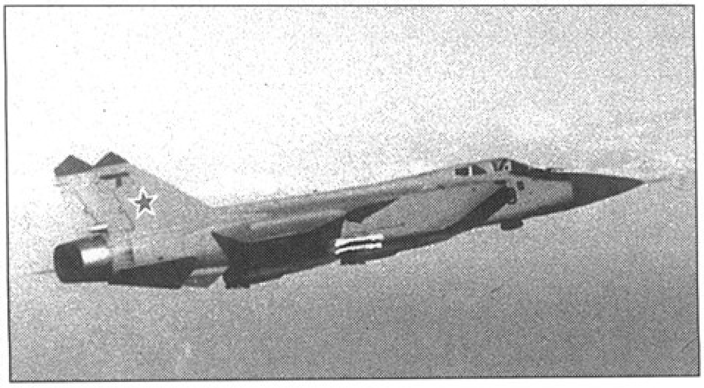
Description: The Su-27 is a long-range interceptor. It combines low drag for high supersonic speed and good transonic acceleration. The long forward fuselage accommodates a 40-inch radar antenna and the Su-27's ten missile armament is equalled only by the massive MiG-31M. Like the F-22, it uses thrust-vectoring engines which lets the Su-27 to perform a "hook" (a rapid pitch-up, deceleration and roll).



Mikoyan MiG-31

Nickname: Foxhound **Wingspan:** 44 feet
Length: 74 feet **Max Weight:** 101,825 pounds
Max Speed: 1,865 mph **Max Range:** 450 miles
Armament: Cannon, R-33, R-40 and R-60 AAMs.

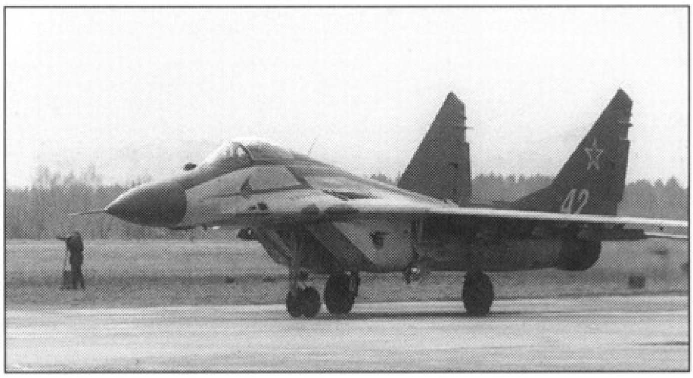
Description: The MiG-31 is the largest fighter ever built. It was designed to intercept low-flying bombers or fly over the Arctic and destroy B-52s before they could launch their missiles. The Foxhound was the first Russian fighter which could engage several targets at the same time. As for dogfighting, it is not a match for today's agile fighters.



Mikoyan MiG-29/33

Nickname: Fulcrum **Wingspan:** 37 feet
Length: 57 feet **Max Weight:** 40,775 pounds
Max Speed: 1,520 mph **Max Range:** 350 miles
Armament: Cannon, R-27, R-60, and R-73 AAMs.

Description: The Fulcrum is a short-range air-superiority fighter, designed to fly from forward air bases. It has fly-by-wire controls, glass cockpit, multi-mode radar and full load of weapons. The only real drawbacks of the MiG-29 are its range and visibility. Its cockpit and cluttered instrument panels make it very difficult for pilots to navigate, find targets and attack.



Mikoyan MiG-25

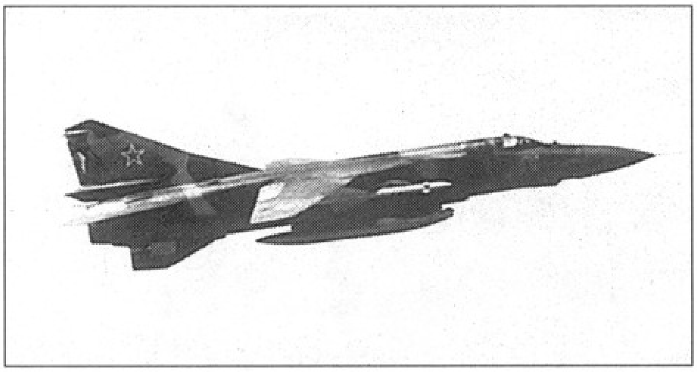
Nickname: Foxbat **Wingspan:** 46 feet
Length: 65 feet **Max Weight:** 80,930 pounds
Max Speed: 1,865 mph **Max Range:** 480 miles
Armament: R-40 AAMs, and R-60 AAMs.

Description: The MiG-25 is a versatile medium-to-high-altitude fighter which has the speciality of destroying surface-to-air missile radars. As an interceptor, it is designed to be flown under tight ground control, with the pilot's eyes on the radar-not the sky. The MiG-25 can easily exceed its nominal max. speed of Mach 2.83, attaining its official max. speed even with a full weapon load.

Mikoyan MiG-23/27

Nickname: Flogger
Wingspan: 46 feet
Length: 51 feet
Max Weight: 38,230 pounds
Max Speed: 1,560 mph
Max Range: 500 miles
Armament: Cannon, R-23AAMs and R-60 AAMs.

Description: The Flogger is a tactical (or "frontal") fighter with a heavier armament, greater range and larger radar than the MiG-21. The MiG-23 is fast and has a capable radar/missile system. Its drawbacks include poor visibility and generally unresponsive controls. In particular, the forward view is obstructed by the heavy-framed windshield, causing pilots to complain that they can't even see their wingmen.



Mikoyan MiG-21

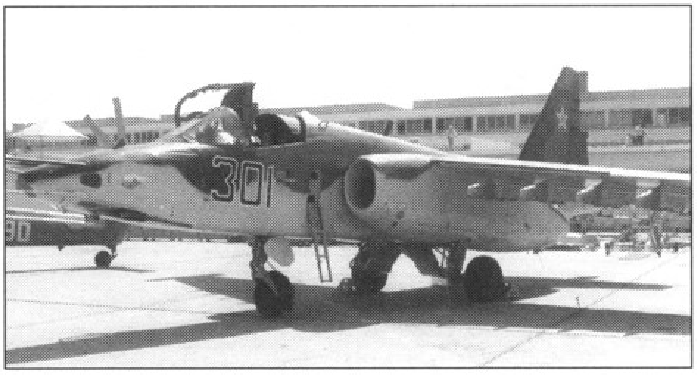
Nickname: Fishbed
Wingspan: 23 feet
Length: 48 feet
Max Weight: 22,920 pounds
Max Speed: 1,350 mph
Max Range: 280 miles
Armament: Cannon, K-13M, and R-60 AAMs.

Description: The MiG-21 has become one of the most popular supersonic fighters ever. The Fishbed is basically a low-altitude interceptor, emphasizing climb, and acceleration. Using its high climb rate, They are easy aircraft to fly and considerably more agile than most of its contemporaries. The MiG-21's main shortcomings are its inadequate equipment and range.

Sukhoi Su-25

Nickname: Frogfoot
Wingspan: 47 feet
Length: 50 feet
Max Weight: 42,000 pounds
Max Speed: 600 mph
Max Range: 345 miles
Armament: Cannon, R-13, R-60, 240mm caliber rockets, chemicals and cluster weapons.

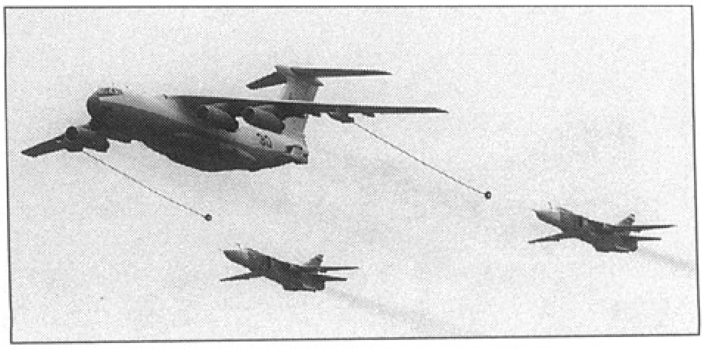
Description: The Frogfoot was first classified as the equivalent of the A-10. After learning more about the Su-25, Westerners found out that it is one of the world's more practical warplanes. The Frogfoot was designed to take hits and survive. A Russian engineer has described the Frogfoot as "the aircraft for the third day of the war, after you have run out of smart weapons."



Sukhoi Su-24

Nickname: Fencer
Wingspan: 58 feet
Length: 80 feet
Max Weight: 87,500 pounds
Max Speed: 895 mph
Max Range: 760 miles
Armament: Cannon, nuclear and conventional bombs, laser and TV guided bombs, Kh-29, Kh-23 and R-60 AAMs.

Description: The Fencer evolved in parallel with the F-111. However, the Su-24 is smaller and more powerful. It specializes in low altitude and high speed attacks. With a very high wing loading and poor cockpit visibility, the Su-24's best combat tactic is to run as fast as possible at low level and hope that the adversary is too busy dodging the ground to get a clear shot.



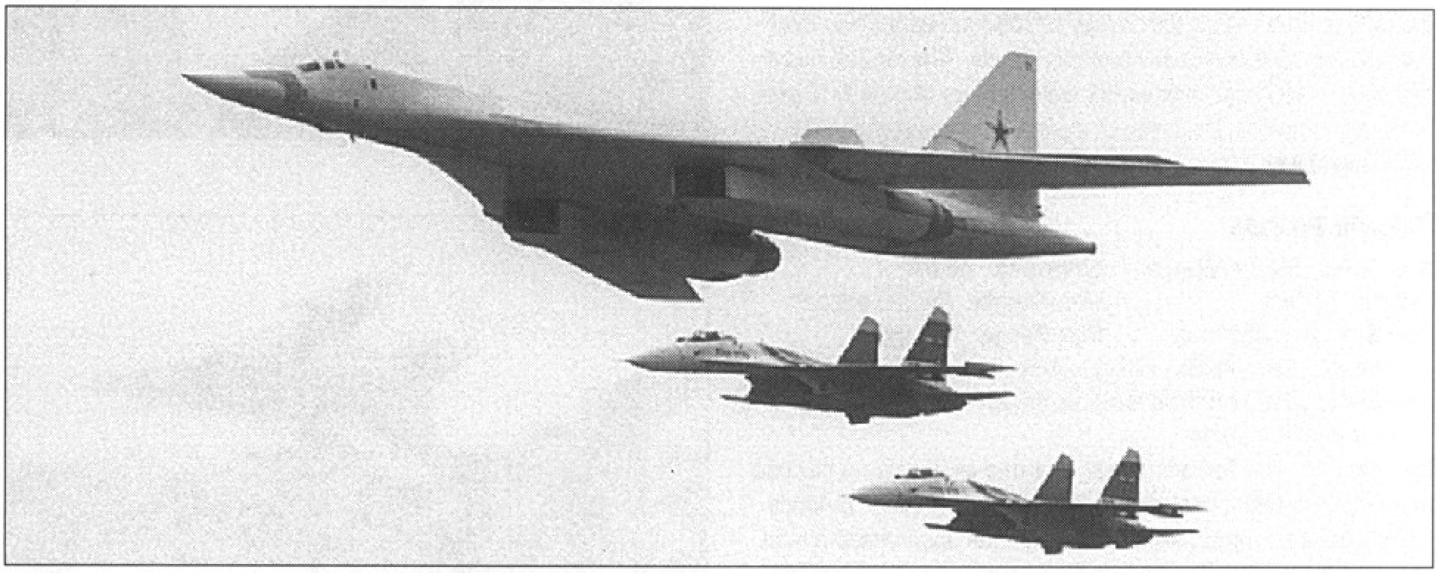
Tupolev Tu-160

Nickname: Blackjack **Wingspan:** 183 feet **Length:** 177 feet

Max Weight: 605,000 pounds **Max Speed:** 1,550 mph **Max Range:** 6,830 miles

Armament: Nuclear and conventional bombs, Kh-15P attack missiles, and cruise missiles.

Description: The Tu-160 is a long-range, supersonic, strategic bombers and missile launcher. It has three internal weapon bays that are big enough to hold long-range cruise missiles. Commpared to the B-1B, the Blackjack is 50% heavier. Its forward fuselage is much more slender, with a pointed nose and a sharply raked-back windshield. These differences suggest that the Tu-160 is a high-altitude, supersonic-cruise aircraft. According to its developers, Tu-160 might carry a 30-ton two-stage rocket booster under its fuselage and release it at Mach 1.7 and 44,000 feet (putting a 2,400 pound payload into orbit).



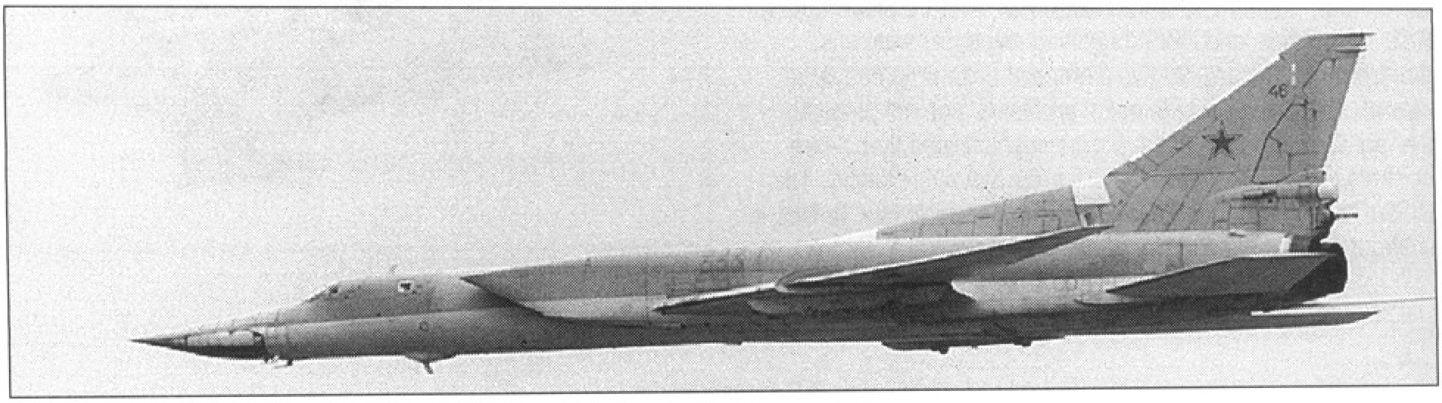
Tupolev Tu-22M3

Nickname: Backfire **Wingspan:** 112 feet **Length:** 139 feet

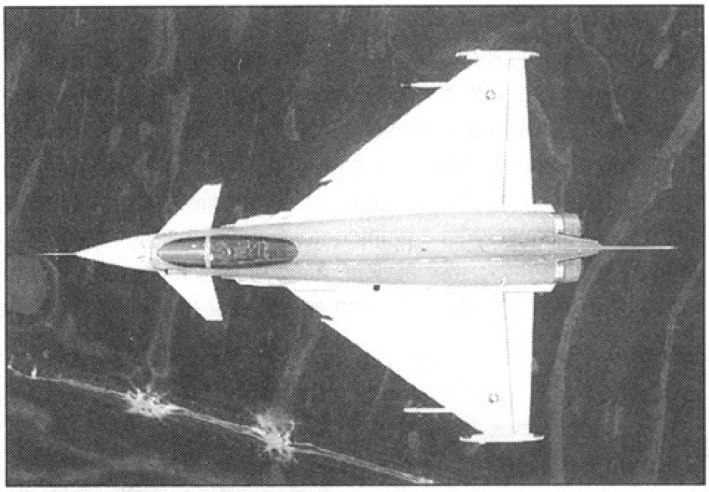
Max Weight: 273,000 pounds **Max Speed:** 1,240 mph **Max Range:** 1360 miles

Armament: Cannon, nuclear and conventional bombs, Kh-22 anti-ship missiles, and Kh-15P anti-radar missiles

Description: The Tu-22M is a medium bomber designed for theatre and regional warfare. It is a heavy and powerful bomber with variable-sweep wings, streamlined fuselage, low-profile, and sharply raked windshield. The Backfire is the reason that the US began building air defense systems. However, experts still believe that a coordinated Tu-22 attack (using several bombers from different directions and heights) can overwhelm these defenses.

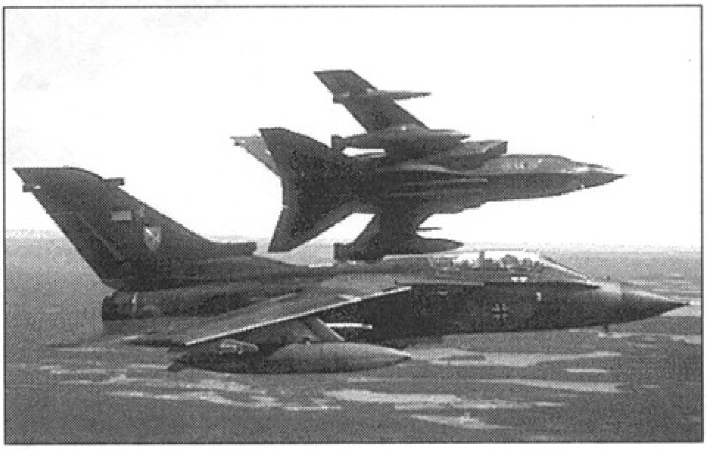


Eurofighter 2000



Nickname: None **Wingspan:** 34 feet
Length: 48 feet **Max Weight:** 46,220 pounds
Max Speed: 1,450 mph **Max Range:** 600 miles
Armament: Cannon, AIM-120 AMRAAMs, and AIM-9 Sidewinders.
Description: The EF 2000 is the latest state-of-the-art Eurofighter. Built largely from composite materials, it has a cropped-delta wing with a canard and fly-by-wire controls. It is larger than the Rafale and can carry a heavy load of AAMs. The EF 2000 is powered by the Eurojet EJ200 produced by an international consortium headed by Rolls-Royce. The aircraft has a few clear advantages over earlier agile fighters like the F-16 and F-15, particularly in the areas of supersonic acceleration and maneuverability.

Panavia Tornado



Nickname: Station Wagon **Wingspan:** 46 feet
Length: 55 feet **Max Weight:** 60,000 pounds
Max Speed: 1,450 mph **Max Range:** 860 miles
Armament: Cannon, Sky Flashes, AIM-9L Sidewinders, AGM-88 HARMs, JP 233 airfield attack missiles, Sea Eagles, and Kormoran ATS missiles.
Description: The Tornado places a strong emphasis on payload and radius, within a minimum overall size. Its engines produce exactly the amount of thrust for low-altitude, high-speed operation (but far too little for air combat or supersonic acceleration). To compensate, Tornados have an unusually large afterburner that almost doubles its thrust. They are generally fast and stable at low altitudes, but they don't have enough wing or thrust to be an agile fighter.

JAS 39 Gripen

Nickname: Griffin **Wingspan:** 26 feet
Length: 46 feet **Max Weight:** 17,635 pounds
Max Speed: 1,320 mph **Max Range:** 600 miles
Armament: Cannon, AIM-120 AMRAAM, AIM-9L Sidewinders, RBS 15 missiles, and DWS 39 gliding dispenser weapons.
Description: The JAS 39 has a cropped delta wing and large canard. This design avoids many problems, but still provides the low drag of a pure delta. It uses sophisticated fly-by-wire controls to compensate for the canard's natural instability. The Griffen is tiny compared to most contemporary fighter. In fact, it is about one quarter the size of an F-22.

Saab 37 Viggen

Nickname: Thunderbolt **Wingspan:** 35 feet
Length: 54 feet **Max Weight:** 45,100 pounds
Max Speed: 1,320 mph **Max Range:** 620 miles

Armament: Cannon, Sky Flash, AIM-9L Sidewinders, RBS 15 ATS missiles, RBS 04 anti-ship missiles.

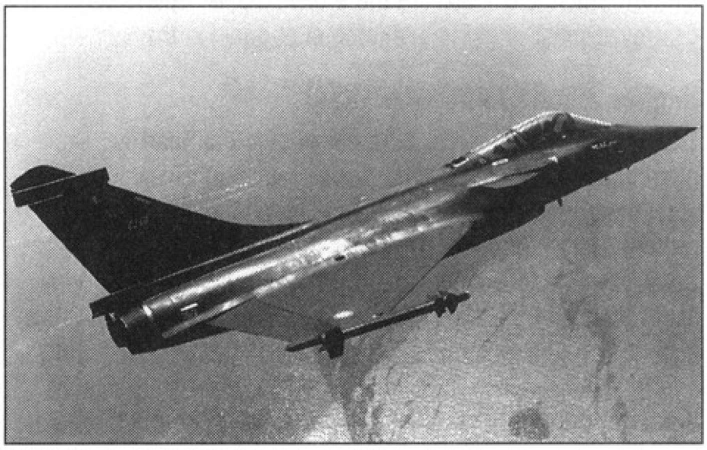
Description: Royal Swedish Air Force had to meet some unique requirements when they built the Viggen. The result is an aircraft which is supersonic, uses complex avionics, carries heavy loads, and flys at high-speed over low levels. It can also take-off and land on very short narrow runways. The Saab 37 is not particularly agile. It flies much like a smaller F-4, except that it is more resistant to stalling.

Dassault Rafale

Nickname: None **Wingspan:** 36 feet
Length: 50 feet **Max Weight:** 42,300 pounds
Max Speed: 1,320 mph **Max Range:** 680 miles with 6,600 lbs. payload

Armament: Cannon, Matra MICA, Apache stand-off, ASMP tactical nuclear missile, AS.30L laser-guided missiles and Exocet anti-ship missiles.

Description: This new generation fighter is about the same size as an F/A-18, but it has a cropped delta wing, blended body, and small canard foreplanes. The configuration retained many of the delta's advantages (light weight, low drag, and fuel capacity) but solved many of its problems. It is more efficient in a sustained tight turn and hsd a lower landing speed, letting it land on aircraft carriers. It also makes considerable use of the latest stealth technology.



Dassault Mirage 2000

Nickname: None **Wingspan:** 30 feet
Length: 47 feet **Max Weight:** 37,480 pounds
Max Speed: 1,450 mph **Max Range:** 920 miles with 2,000 lbs. payload

Armament: Cannon, Matra Super 530, 550 Magic AAM, ASMP tactical nuclear missile, Durandal runway-breaker bombs, and Exocet missiles.

Description: The Mirage 2000 is a smaller, less costly interceptor and air superiority fighter. It has a pure delta wing for light weight, low supersonic drag, extra fuel, and good acceleration. At a high angle of attack, this wing generates a lot of lift and the aircraft is stable. However even with fly-by-wire controls and leading-edge flaps, the Mirage 2000 suffers from poor maneuverability.

WEAPONS

ATA MISSILES (Air-to-Air)

Loral AIM-9 Sidewinder (USA)

This diabolically simple air-to-air missile has scored more air-combat kills than any other. It was invented in the late 1940s by Navy engineers who mated a heat-seeking guidance system to the body of an unguided 5-inch rocket. The AIM-9L, introduced in the late 1970s, can be fired at a target from any angle. More recent versions are even more resistant to decoys. A more compact and more agile version known as the AIM-9X is under development.

Raytheon AIM-7 Sparrow (USA)

First used in the late 1950s, the Sparrow is a semi-active radar homing missile. During combat, the attacking aircraft must illuminates the target with its radar. Using this radar lock from firing to impact, the missile homes in on the target's signal. Although the early versions were disappointing, the improved Sparrows and the British Sky Flash are more dependable. Sparrows destroyed most of the Iraqi aircraft shot down in the Gulf war.

Hughes AIM-120 AMRAAM (USA)

The AMRAAM has several advantages over the Sparrow. The most important is that it is an "active-radar" missile with a complete radar in its nose and its own built-in inertial navigation system. Unlike Sparrow, AMRAAM does not monopolize the radar, allowing the launch aircraft to search for and track other aircraft while the missile is in flight. At short range, AMRAAM's can lock-on to a target as soon as it leaves the launch aircraft. The AMRAAM scored its first kills in 1993 when an F-16 shot down an Iraqi aircraft over the "no-fly zone" in Southern Iraq.

Hughes AIM-54 Phoenix (USA)

The first active-radar missile, the Phoenix was designed to shoot down Tu-22 bombers and their missiles. It is the biggest of all U.S. air-to-air missiles, and it is only carried on the F-14 Tomcat. Maximum range is more than 80 miles under ideal circumstances. A planned replacement for the Phoenix was cancelled in 1991.

Vympel R-27 (RUS)

Russian philosophy has always been to design a new class of missile for each next generation of fighter aircraft. The Vympel R-27 was developed for the MiG-29 and Su-27. It is recognizable by its unique "bow-tie" steering fins along its body. This weapon can be fitted with either infra-red or semi-active radar homing heads. It has an inertial guidance unit and datalink, so it can be launched at an extended range. According to some reports, one version of the R-27 is a passive anti-radar weapon for use against AWACS. The R027 can be rigged for short-range or long-range operation.

Vympel R-33 (RUS)

Similar in size and shape to Phoenix, this long-range air-to-air missile arms the MiG-31. Unlike Phoenix, it is a semi-active weapon. However, because it has an autonomous mid-course guidance system and the MiG-31 can switch very rapidly from one target to another, the system is able to engage multiple targets. Weighing 1,300 pounds, it is the world's biggest AAM.

Vympel R-73 (RUS)

The R-73 is world's best short-range missile. It caused panic in the West when its true characteristics became known in 1989. Features include a seeker which can lock on to targets up to 90° off the missile's nose, a thrust-vectoring rocket motor and two sets of control surfaces. The pilot can direct the seeker with a helmet-mounted sight. Because the missile can turn very rapidly after launch, it has a wide engagement envelope (even against fast-moving or maneuvering targets) and a short flight (giving countermeasures less time to work). The R-73 may also form the basis of a rearward-fired missile which has been tested by and which may be fitted to the Su-34 and Su-35.

Vympel R-77 (RUS)

Dubbed AMRAAMSki by some Western analysts, the R-77 has a guidance system like the AMRAAM. It employs a combination of active radar, inertial guidance, and updating from the launch aircraft. The R-77's aerodynamics are unique among AAMs, however. It has a short-span, long-chord rectangular wings, and trellis-shaped tail surfaces. The tail surfaces provide very high maneuverability with low drag, and require less power to move them. Its short wings and foldable fins also make it suitable for internal carriage. Although the R-77 has been displayed with the MiG-29M and Su-35, it was probably designed for the next generation of stealthy Russian fighters.

Matra MICA (FRA)

France's Matra has earned new respect with the MICA. This missile is being developed in two versions. One employs an infra-red homing while the other uses an active radar seeker. Both contain inertial navigation and a datalink for mid-course guidance. They will have an identical airframe featuring thrust-vectoring for control. This gives the pilot a unique range of options to deal with countermeasures. The missile is mid-way in size between the AIM-9 and AMRAAM.

Python (ISR)

The Rafael Python 3 resembles an enlarged AIM-9 with swept wings. It was designed because the Israeli air force was dissatisfied with the lethality of the standard AIM-9L's warhead. Python has a larger warhead and an active laser proximity fuze (most AAMs are not designed to score direct hits, so fuze design is extremely important). According to Israeli sources, most of the Syrian aircraft shot down during the June 1982 air battles over Lebanon were destroyed by Pythons. A new short-range missile called "Python 4" is in service, but the details are still secret.

ATS MISSILES (Air-to-Surface)

Air-to-surface (or ATS) missiles are critical fire-power against specific ground targets. Some utilize revolutionary electro-optical guidance systems to find and destroy targets.

Hughes AGM-65 Maverick (US)

This versatile missile is one of the few fighter-launched weapons which can reliably hit a moving vehicle at long range. The Maverick uses a TV seeker to lock-on to a target in its field of view and track it automatically. The AGM-65B uses a telephoto seeker, the AGM-65D has infra-red seeker for night operations, and the AGM-65E is laser-guided.

Texas Instruments AGM-88 HARM (US)

Development of the High-speed Anti-Radiation Missile (HARM) started after Vietnam to replace to the improvised Shrike and Standard anti-radar missiles. The HARM utilizes a passive seeker which detects signals from a hostile radar and determines its bearing. Its high speed gives radar operators less time to react before the missile hits. High-tech electronics allow the HARM to search even if the signal is interrupted briefly.

Rockwell GBU-15/AGM-130 (US)

This family of heavyweight missiles is designed to destroy high-value, heavily defended targets like crucial bridges and communications facilities. They employ electro-optical guidance with a daylight or infra-red camera in the nose. They also are connected by a radio datalink to the launch aircraft. The original GBU-15 was a glide bomb based upon a 2,000-pound Mk84 bomb, whereas the new AGM-130 has a rocket booster to extend its range and can use the I-2000 hard-target warhead. This weapon is very accurate.

Texas Instruments AGM-154 JSOW (US)

The Joint Stand-Off Weapon (or JSOW) is a new generation glide weapon designed to destroy multiple targets (like vehicles) or single hard targets (such as aircraft shelters). This deadly weapon is accurate enough to hit a group of vehicles or missile battery with a shower of small submunitions. All future JSOWs are expected to have a single hard-target warhead and an autonomous radar or infra-red seeker.

McDonnell Douglas AGM-84 Harpoon/SLAM (US)

One of the most versatile of missiles, the subsonic Harpoon was originally designed as an anti-shipping weapon. It can be launched from aircraft, surface ships, submarines or from a truck as a coastal defense weapon. It is a "fire-and-forget" missile with an active radar seeker that can be programmed to attack an individual ship. The SLAM variant (Subsonic Land Attack Missile) has a different warhead and a new guidance system. It uses the Global Positioning System (GPS) satellite navigation receiver and seeker from the infra-red version of Maverick.

Zvezda Kh-25 (RUS)

About the same size as Maverick, this weapon has many variants: the laser-guided Kh-25ML, the anti-radar Kh-25MP and the radio-guided Kh-25MR. The primary difference between this weapon and most Western air-to-surface weapons, however, is its speed. The Kh-25 flies at almost 2,000 mph, while the Maverick is subsonic. Even though the laser and radio-guided versions are not "fire-and-forget," their speed allows the launch aircraft to break off at a safe distance.

Molniya Kh-29 (RUS)

The Kh-29 is similar in shape and performance to the Kh-25, but is larger and carries a bigger warhead. The only two versions identified are the laser-guided Kh-29L and the TV-guided Kh-29T. Both missiles are operational on MiG-27, Su-24 and Su-25 aircraft.

Raduga Kh-59M (RUS)

Named the Hornet, the Kh-59 is a high-accuracy missile similar to the AGM-84D SLAM. After launch, the Kh-59 navigates to its target automatically. When it gets within visual range, it transmits a TV image of the target area to the "stand-off" launch aircraft. The weapon operator identifies the target on his TV monitor and locks the missile on to it. The missile will hit the target within 2-3 meters of the aimpoint. In Russian service, the Kh-59M and its datalink pod may be carried by the Su-24M.

Raduga Kh-58Yu (RUS)

This supersonic anti-radar missile is bigger and faster than the HARM missile. It was specifically developed to go after Nike, Hawk, Improved Hawk and Patriot radars. It has a range of 120-200 km and probably flies at around Mach 4. According to its designers, it can locate a target and hit it even if its radar is shut down before impact. The weapon was designed specifically for the MiG-25BM defense-suppression aircraft.

Raduga Kh-22 (RUS)

The Kh-22 was designed to cripple or sink US Navy aircraft carriers. The six-ton missile carries a 2,000-pound warhead. Its damage effects is compounded by its nearly Mach 3 impact speed and the detonation of its remaining liquid rocket fuel. The Kh-22 can be fitted with an anti-radiation or active-radar seeker. It is carried by the Tu-22 bomber.

Aerospatiale AM 39 Exocet (FR)

This anti-ship missile has been in service since 1979. It can be launched from several different airplanes and helicopters. It is best known for its use during the Falklands War where it was used to sink the destroyer HMS Sheffield and a cargo ship. The Exocet was also used by Iraqi aircraft to sink the USS Stark in 1987. This1,430 lbs. missile is rocket-powered and has active-radar guidance.

Popeye (ISR)

The Popeye is probably the most devastating conventional missile in existence. This weapon combines pinpoint accuracy with a 1,000-pound warhead. It was developed in the early 1980s, when intelligence reports suggested that large Soviet surface-to-air missiles were being emplaced in concrete bunkers. Popeyes borrow the basic guidance techniques of the Raduga Kh-59M and SLAM. It navigates autonomously until it's close enough for its imaging seeker to find the target. Then, the operator aims the missile at the correct aimpoint via a datalink. Popeye is powered by a solid rocket motor instead of the turbojet used by other missiles. It can be fitted with an infra-red or daylight-video seekers and carries either a hard-target penetrator or blast-fragmentation warhead.

BOMBS

GBU-29 JDAM (US)

The GBU-29 Joint Direct Attack Munition is a low-cost guided bomb. It consists of a tail section which can be attached to the 2,000-pound Mk84 blast-fragmentation bomb, the BLU-109 hard-target weapon, or the new 1,000-pound GBU-30. The tail section uses a GPS receiver and a simple inertial navigation unit to ensure that the bomb follows the trajectory predicted by the aircraft's aiming computer. JDAM is called a "semi-precise" weapon because half of the munition should land within a 40 ft. circle around the target. Two other versions of JDAM are being developed. One is a hard-target weapon with a radar terminal seeker for pinpoint accuracy while the other is a dispenser weapon made to carry a wide variety of guided and unguided submunitions.

Texas Instruments GBU-24 (US)

This second-generation laser-guided bomb is also known as Paveway III. It was used extensively during the Gulf War. Compared with earlier LGBs, it has larger wings and a more sophisticated guidance system. This allows it to be released at a greater stand-off range and a lower altitude. However, it still suffers from the basic disadvantage of an LGB — the target has to be illuminated with a laser until impact. This usually means that the launch aircraft or a "buddy" designator aircraft has to remain within line-of-sight of the target.

CANNONS

Although military experts in the 1960's thought that cannons were no longer necesary, experience proved them wrong. The Vietnam War demonstrated the importance of the cannon. Since then it has become an essential element of every fighter.

Lockheed Martin M61A1 (US)

The most successful aircraft gun ever, the M61A1 uses the Gatling principle to combine accuracy, a lethal round and a high rate of fire. The Gatling is reliable and can attain a far faster rate of fire than a single-barrel weapon. It had been neglected for many years because (unlike most machine guns) it required external power. Since its development, the M61 has been used many different kinds of aircraft. In the F-4E, the cannon had a reliable feed system that allowed it to fire 6,000 rounds per minute. A more improved version with longer composite-wound barrels has been developed for the F-22.

CUSTOMER INFORMATION

This section will help you with many of the questions that you may have about JetFighter III. It includes information on optimizing the game, troubleshooting problems, customer assistance, warranty information, and the product's license agreement. Please consult this section before moving on to other sources.

OPTIMIZING PERFORMANCE

Everyone's computers are different, but there are some things you can do to optimize the program's performance on your machine. This section explains some of the options and settings which will increase the performance of JetFighter III on your computer.

WHEN TO OPTIMIZE

When we say "optimizing performance" we are basically talking about different ways to increase the program's frame rate. Frame rate is the number of times per second that the computer draws a new image on the screen. (This is often referred to as frames per second or "fps"). Like a movie, this variable is very important to the program's appearance and overall 'feel'. For example, low frame rates may feel a little jerky, while fast frame rates should feel fluid and smooth. Generally, you will enjoy a game more at a higher frame rate.

JetFighter III is a sophisticated program that has already been highly optimized to run as fast as possible. However, depending on your particular computer, this may not be enough for your tastes. You may still want to maximize the program's frame rate.

A super-fast frame rate may be especially important during heavy combat or when flying over rugged terrain. During these times you may want to change some of the program's settings to make JetFighter III run faster. There are several easy ways to do this (see below). Just remember, follow your tastes when it comes to optimizing. If you are satisfied with the speed, you don't need to change anything!

SETTINGS TO CHANGE

Different features (such as higher resolution modes) take up more processing time than others. As the result, you may want to change some of JetFighter III's default settings to increase the frame rate. There are five main ways to increase the program's performance. They are changing the program's resolution modes, screen sizes, clouds, cockpit display, and visibility. Each of these options are discussed below.

RESOLUTION MODES

Like a television set, the display on your computer monitor is made up of many small dots (called pixels). The size and number of these pixels has a dramatic impact on the appearance of the program. Pretend for a moment that you are asked to make a circle using sugar cubes. If you only have three sugar cubes, it will be impossible for you to arrange them to look like a circle. The result would be a very "low resolution" circle. But, if you have a hundred sugar cubes, you can make a very round "high resolution" circle. Just like the sugar cubes, the more pixels that are in an image, the larger and more detailed the image will be.

JetFighter III offers four different resolution modes: 320x200, 640x350, 640x400, and 640x480. As you know from the sugar cube example, JetFighter III will look much better in the higher resolutions, but because each pixel takes some time to calculate and draw, it will run more slowly. To demonstrate this point, compare the number of frames per second in the lowest and highest resolutions. In 320x200 mode, JetFighter III may run 225% faster than the highest resolution.

Note:

[Shift-F9]	320x200 mode
[Shift-F10]	640x350 mode
[Shift-F11]	640x400 mode
[Shift-F12]	640x480 mode

SCREEN SIZES

JetFighter III allows you to change the physical size of the image being drawn on your computer screen. Unlike other programs which may shrink or compress the screen, JetFighter III trims "scan lines" from the top and bottom of the display. The result is improved performance without sacrificing quality.

The program offers three different screen sizes: full, medium and small. The small screen is about 60% of the full screen whereas the medium screen is about 80%. Of course, the main benefit is how the smaller screen sizes effect performance. On some systems the small screen may be about 20% faster than the full screen.

Note:

[Alt-F5]	Cycle through three screen sizes

CLOUDS

Few flight sims provide the subtle, realistic-looking clouds that are available in JetFigher III. These clouds enhance the authenticity of the gaming environment, but they also reduce its speed. An easy way to increase frame rate is to turn the clouds off by pressing **[Alt-C]** until the clouds disappear. This should increase performance by about 25%. The high-quality 'smooth' clouds take even more processing power than the normal clouds.

COCKPIT DISPLAY

JetFighter III includes a virtual cockpit which allows you to look around just like a real pilot. However, these richly-detailed panels, displays, and artwork do slow down performance. If you would like a quick way to increase speed, try turning the cockpit instrument panel off by pressing **[P]**. This should increase the program's performance by about 10-15%.

VISIBILITY

In the real world objects and scenery off in the distance come into focus as you approach. This effect is recreated in JF3 through the use of hazing. As you approach the horizon, the scenery and terrain is drawn to that point of visibility. JetFighter III gives you the option of moving the horizon in closer, thus decreasing your visibility and causing less scenery in the distance to be drawn. This should increase the program's performance. There are three levels of visibility: clear, hazy, and foggy. Press **[Alt-V]** to cycle through the three visibility levels.

RECOMMENDED SETTINGS

Every customer has different preferences. Some would prefer to have gorgeous graphics while other prefer fast-paced action. The following lists are what we have found to be the recommended optimization settings for six different computer systems. They try to balance JetFighter III's appearance against a higher frame rate.

486/66

Resolution Mode: 320x200
Screen Size: Small
Clouds: Off
Cockpit Display: Off
Visibility: Foggy

PENTIUM 90

Resolution Mode: 320x200
Screen Size: Medium
Clouds: On
Cockpit Display: On
Visibility: Hazy

PENTIUM 120

Resolution Mode: 320x200
Screen Size: Full
Clouds: On
Cockpit Display: On
Visibility: Clear

PENTIUM 133

Resolution Mode: 640x400
Screen Size: Medium
Clouds: On
Cockpit Display: On
Visibility: Hazy

PENTIUM 166 and above

Resolution Mode: 640x480
Screen Size: Full
Clouds: On
Cockpit Display: On
Visibility: Clear

QUESTIONS ON OPTIMIZATION

If you are have questions about the effects of hardware on JF3, please read this section. It covers the most common questions:

Q: Why does JetFighter III run slowly on my computer?

A: JetFighter III is a very sophisticated program. If you have an older system, your computer may not be fast enough to process all of the graphics. Fortunately there are certain settings to make JetFighter III run faster on certain systems. But, there is no substitute for a system upgrade (i.e., you may see a 300% increase in JetFighter III's speed after upgrading from a 486/66 to a Pentium 133).

Q: I have 8 Megs of RAM right now and I am wondering if I should upgrade to 12 Megs or more for JetFighter III? Will it run any faster?

A: No, more memory will not make JetFighter III run any faster. 12 megs of RAM will simply allow you the option of running JF3 in hi-res, and give you more and better looking terrain textures.

Q: Does my old video card effect performance?

A: Yes, older video cards will slow down JetFighter III even if you have a fast computer system. For improved performance, you may consider upgrading your video card if it is more than three years old.

Q: Will the program run faster if I have a quad-speed (4X) CD-ROM drive?

A: The answer is Yes and No. Yes, the animations playing onboard the carrier will play faster if you have a faster CD-ROM. However, the simulator (or "game") will not run any faster because it does not run off of the CD.

TROUBLESHOOTING

This is a technical reference section. It is not meant to be light reading, but we have presented it in a question and answer format to make it more readable. This section is divided into two main parts: Installation Problems and Running Problems.

INSTALLATION PROBLEMS

If you are having trouble installing JetFighter III, please read this section. It covers the most common questions about installation.

Q: ***The install program won't run on my computer.***

A: If you are having trouble, it may be a sign of hardware incompatibility. First, try the install program on a different computer. The install program is very simple and should run on any machine. If it works on a different computer, you probably have a hardware incompatibility. However, in the unlikely event that the CD-ROM does not work on another machine, it may be damaged. If you believe your CD-ROM is damaged, read the next question and answer.

Q: ***What if my CD-ROM is not readable?***

A: This is very rare. First, check your CD-ROM to see if it is physically cracked or scratched. Second, be certain you have the proper drivers loaded. Third and most importantly, make sure you can read a different CD-ROM in your drive. However, in the unlikely event that the CD-ROM is not readable, you should be able to obtain a replacement from the place of purchase, or from Mission Studios directly.

Q: ***I keep getting the error message "VESA not found"?***

A: You probably have an older graphics card that does not have built in VESA support. In most cases, all you have to do is run a software VESA driver. For example, the ATI Mach32 video card instructions would be to exit to DOS, go to the /Mach32 directory and type VVESA. Consult your graphics card documentation on how to load your particular card's VESA driver. There are also several excellent shareware VESA drivers available online and from the Internet.

Q: ***My CD-ROM drive works fine in Windows95 but when I RESTART IN MS-DOS MODE my CD-ROM drive no longer functions?***

A: You do not have the drivers for the CD-ROM drive loaded in DOS mode. This requires specific software for your particular CD-ROM drive and certain commands added to your autoexec.bat and config.sys files. Consult your hardware documentation or contact the company where you purchased your computer. This will be well worth the effort. JetFighter III, and many other games, will run better and faster from MS-DOS.

Q: ***Is there an "un-installation" process?***

A: To remove JF3 from your machine, simply delete all the files in your JF3 directory (for most people this will be C:\JF3) and remove the directory. If you need help deleting files and directories, please consult your operating system's reference manual.

PROBLEMS RUNNING JETFIGHTER

If you have successfully installed the program but are still having trouble running JetFighter III, please read this section. It covers the most common computer problems that people experience .

Q: ***The program installed fine, but it tells me that I have "insufficient memory" when I try to run it.***

A: This should only be a problem on machines with 8 megs of RAM memory. Your computer probably loaded a "memory resident program" which is using too much memory. These programs are usually loaded by your computer's "config.sys" or "autoexec.bat" files. Quick suggestions are to turn off any EMS, Smartdrive, or RAMdrive that your system is using. This process is different for DOS and Windows95 systems. Consult your operating system instructions.

Q: ***I was using the program and everything was fine. Then suddenly the game stopped and my computer locked up.***

A: A memory resident program, TSR, or hardware board probably interrupted JF3 in such a way that the program could not recover. The common solution is to just re-boot your machine. If this becomes a chronic problem, any TSRs such as virus checkers, screen savers, or something similar you might have loaded on your system should be temporarily removed.

Q: ***The sound volume in the game doesn't work or is very low.***

A: First, make sure that your speakers are plugged in and turned on. Second, check to see that the volume knobs on the speakers are turned up. Third, see if you selected the correct sound card settings in the Configuration Menu. Lastly, be certain that your volume on your sound card is set correctly.

Most sound cards have a built-in volume setting which may be re-set to a very low level each time you re-start your computer. The utilities that came with your sound board should allow you to adjust the volume before you play JF3.

If you need to change your soundcard settings or you install a new card, type INSTALL at the \JF3 directory.

Q: ***JetFighter III only seems to work if my computer's memory manager isn't installed.***

A: JF3 has been tested to work with all major memory managers. However, do not let your memory manager use video memory! If your memory manager uses the VESA video memory area, JF3 may not work because the simulator needs that graphics memory. Consult your memory manager guide for instructions on excluding these video memory addresses.

Q: ***JetFighter III gave me the message "CD-ROM drive not detected."***

A: This is a common problem. If you are playing JetFighter III in DOS (the best way) you need a DOS CD-ROM driver. If you receive this message then you must contact your computer dealer to ask for your specific CD-ROM driver and instructions on how to load it.

HOWEVER, there is an alternate solution. If you have Windows95 you can run JetFighter III from a MS-DOS session. Click on the MS-DOS PROMPT icon in Windows95 and go to the \JF3 directory to run JetFighter III. Remember, this is not the best way to run the program as Windows uses valuable system resources which cause the game to run slower than it would restarting in MS-DOS MODE.

REMEMBER, JetFighter III requires that the CD be in the drive at all times during play.

Q: ***I prefer to run JetFighter III under Windows95 yet I can't get it to run in the higher resolutions?***

Q: ***I prefer to run JetFighter III under Windows95 yet I can't get the sounds to work?***

A: Many soundcards and video graphics cards, even new ones, require updated software drivers to run under Windows95. In this case you need to get the new drivers from your specific card's manufacturer. Most of these drivers are available for download on AOL, Compuserve, and from the hardware company's website via the Internet.

Q: ***I get the message "Mouse not detected."***

Q: ***I can't get my mouse to work.***

A: You don't need a mouse to play JetFighter III but it does make it easier to navigate around the carrier part of the game. Make sure that you have your mouse driver loaded (see above) and confirm that your mouse works with other DOS (not Windows) applications. Just because your mouse works in Windows does not mean your driver is loaded. Second, be certain that you have the most current version of your mouse driver. Third, your mouse must be 100% Microsoft compatible to work with JF3. Lastly, check with the mouse's manufacturer.

Q: ***When I run the program, the screens don't seem to be drawn or erased correctly. Lines or other video irregularities appear.***

A: There are many different video cards so it is impossible to make sure our program is compatible with all of them. If you experience difficulties relating to JF3 graphics, you may need to load a "VESA" driver before starting the program. If you are unfamiliar with "VESA," we suggest you contact the manufacturer of your video card or your computer dealer for a copy. If they are unable to supply you with a driver, try to download one from Compuserve, America On-line, or the Internet website of the video card manufacturer.

Q: ***The load time for missions is very long.***

A: If you have 16 Megs of RAM or greater, try loading Smartdrive. In MS-DOS at the prompt, type Smartdrv. If this does not work, consult your operating system manual.

Q: ***I'm using Windows, DOSSHELL, or a menu program and JF3 won't run.***

A: JF3 requires all the resources of your computer. Windows, DOSSHELL and most menu programs use up some system resources when they launch other applications. JF3 probably will not be able to function without these resources. Fully exit to DOS before running the program.

Q: ***I've tried everything and I still can't get the program to run on my machine.***

A: If the program still doesn't run, you may have a hardware conflict. This could be caused by the graphics card, sound card, or other hardware. The best way to check to see if you have a hardware conflict is to try running your copy of JF3 on a different computer. If the program runs fine on the other machine, your system may be incompatible.

Your first step should always be to check our FAQ available via the website, AOL, or Compuserve. Then contact Customer Assistance if necessary. Most hardware incompatibilities are actually easy to solve and you can often get your dealer to help you out. Computer manufacturers are usually happy to help out and we can usually work with the manufacturer to try to find a solution to the problem.

CUSTOMER ASSISTANCE

We want to be sure you get as much enjoyment out of JF3 as possible. If you have a problem with the program, first be sure you have read this manual. The Troubleshooting section can solve most problems. If that still doesn't help, try the following:

ONLINE SUPPORT

Chances are that the question you have about JetFighter III has already been answered. The best way to get help and hints on JF3 is through the many computerized information services available today. Here is a list of some places that people might talk about JetFighter III and flight simulators in general.

INTERNET

Our web address is: **www.missionstudios.com**. Check this site for the latest Frequently Asked Questons (FAQ) document, links to other flight sim sites and for any patches or upgrades. There are many excellent websites dedicated to computer flight simulations. Information on JetFighter III and flight sims in general can be found in the newsgroup **comp.sys.ibm.pc.games.flight-sim**.

COMPUSERVE

There are two areas to find information on JetFighter III: the FLIGHT SIMULATION FORUM and GAMCPUB FORUM. The FLIGHT SIMULATION FORUM has the MODERN AIR COMBAT section which will have messages relating to JetFighter III. Visit the GAMEPUB INDEX to access Mission Studios' listing in the GAMEPUB FORUM. Also, at GO typing "MISSION" will take you directly there. For membership information call CompuServe at 1-800-848-8199 and ask for your free introductory membership.

AMERICA ONLINE

There are two areas to find information on JetFighter III: the FLIGHT SIM RESOURCE CENTER and the MISSION STUDIOS area. JetFighter III has a folder in the bulleting board of the FLIGHT SIM RESOURCE CENTER. For the MISSION STUDIOS area, at the Keyword type "Mission Studios." For membership information call America Online at 1-800-827-6364 and ask for your free introductory membership.

PRODIGY

Prodigy has discussion areas for many types of games, including flight simulators.

CONTACT US DIRECTLY

If you can't get your questions answered by any other means, you can contact Customer Assistance (Take 2) directly. Because we are a small company, please contact us only after you have tried other methods. The most effecient way to ask your question is via email. Also please make sure that you have sent in the registration card to register your copy of the product. Our addresses are:

- **EMAIL**............t2supprt@take2games.com
- **U.S. MAIL** ......Take 2 Interactive
  Attn: JF3 Tech Support
  1004 Ligonier, 3rd Floor
  Latrobe, PA 15650
- **TELEPHONE** ....(412) 539-6407 [Mon.-Fri. 9.-5 EST]
- **FAX** ....(412) 539-3195

Our current list of Frequently Asked Questions (FAQ) will be available via our website and all major online services. This list documents all the problems that have been reported to us and gives solutions to them. It's very useful to have on hand in case you ever have another question.

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GLOSSARY

This glossary contains a list of terms and abbreviations that you may come across in general aviation. Many of these words are also used in this manual.

A

A/A
See Air-to-Air.

AAA
Anti-Aircraft Artillery.

AAM
Air-to-Air Missile.

AAW
Anti-Air Warfare.

AB
See Afterburner.

A-C
Pilot jargon referring to the border between Argentina and Chile.

ACL
Automatic Carrier Landing.

ACLS
Automatic Carrier Landing System.

ACM
Air Combat Maneuvering. Generally refers to flight maneuvering.

ACT
Air Combat Tactics. Generally refers to flight tactics.

ACQ
Acquisition.

ADI
Attitude Director Indicator.

AEW
Airborne Early Warning Aircraft.

AFCS
Automatic Flight Control System.

AFT
The rear of a ship. Also known as Stern.

AFTERBURNER
The section of a gas turbine engine used in military aircraft that produces additional thrust by spraying raw fuel into the exhaust and igniting it.

A/G
See Air-to-Ground.

AGL
Above Ground Level.

AHRS
Attitude Heading Reference System.

AIC
Airborne Intercept Control.

AILERONS
The hinged trailing edges of a wing which can be manipulated to change the plane's lift and altitude.

AILERON ROLL
A maneuver whereby the aircraft rolls about its axis of flight induced solely by the use of ailerons.

AIMING RETICULE
An optical image used to aim a weapon when using the HUD. It is also known as Pipper.

AIR BOSS
Officer in control of the hangar and flight decks on a carrier.

AIR BRAKE
See Speedbrake.

AIRFOIL
Another word for a wing.

AIRSPEED
The velocity of an aircraft as compared to the surrounding air.

AIRSPEED INDICATOR
An onboard instrument used to determine the current Airspeed.

AIR-TO-AIR
Generally refers to a form of combat or a type of weapon. Most frequently used to describe a missile launched from an airplane with the intention of destroying another airplane or missile. Also known as A/A.

AIR-TO-GROUND
Generally refers to a form of combat or a type of weapon. Most frequently used to describe a missile or bomb launched from an airplane with the intention of destroying a target on the surface. Also known as A/G.

AIR-TO-GROUND TARGETING
The technique of locating a ground target and delivering weapons to it.

ALPHA
The designation used for a mission wing which will be escorting and protecting planes (like AWACS) from enemy fighters.

ALTIMETER
The onboard instrument which senses air pressure in order to gauge altitude.

ATITUDE INDICATOR
A device displaying the aircraft's orientation with respect to the horizon.

AM
See AMRAAM.

AMRAAM
An active-radar, medium range, air-to-air missile, this weapon has its own radar system and built-in inertial navigation system. The AMRAAM is the successor to the earlier Sparrow missile. Also known as AM.

ANGELS
Pilot jargon to denote the altitude of friendly aircraft in thousands of feet.

ANGLE OF APPROACH
The angle representing the ratio between ground speed and decreasing altitude. It is most often used in landing an aircraft. Also known as Glideslope.

ANGLE OF ATTACK
The angle of the wing surface to the airflow. If the angle of attack exceeds the wing's thrust, the plane will experience a loss of lift or Stall. Also known as AOA.

ANGLE OF CLIMB
The angle representing the ratio between ground speed and increasing altitude. In its simplest terms, it is the angle of the plane's nose above the horizon.

ANGLE OF DESCENT
Similar to Angle of Approach, but it is typically used in air-to-ground ordinance delivery.

AOA
See Angle Of Attack.

AON
Angle Off the Nose.

AOT
Angle Off the Aail.

APPROACH
The final flight path of an airplane that is landing.

ARG
Pilot jargon referring to Argentinean enemy units or positions.

ARRESTOR HOOK
A large steel bar with a protrusion to "catch" an arrestor cable used to stop an aircraft as it lands on an aircraft carrier. Also known as a Tail Hook.

ASPECT
The orientation of an aircraft as viewed from another. Important in targeting weapons.

ASR
Air Surveillance Radar.

ASW
Anti-Submarine Warfare.

ATDC
Airborne Tactical Data Control.

ATDS
Airborne tactical Data System.

AUTO
Generally refers to the activation of an automated system.

AUTOPILOT
A feature on many modern aircraft which will fly the plane without assistance from the pilot.

AVIONICS
A general terms for the airplane's electronic systems.

AWACS
Airborne Weapons And Control System.

B

BALLISTIC MISSILE
A surface-to-surface missile whose warheads are delivered by a short-lived boost into a low, semi-orbit.

BANDIT
An airplane identified as hostile.

BANK
When an aircraft rolls to one side.

BARCAP
See Barrier Combat Air Patrol.

BARRIER COMBAT AIR PATROL
Mission type instructing the pilot to engage any aircraft crossing into his patrol zone. This order is used to protect a corridor through which friendly bombers will pass on their way toward a target.

BARREL ROLL
A large rolling maneuver induced by aileron and rudder.

BER
Bearing. See Heading.

BETA
The designation used for a mission wing which will be bombing a ground target.

BFM
Basic Fighter Maneuvers

BINGO
Refers to a low fuel state. It is the amount of fuel necessary to complete a return trip back to base.

BLACKOUT
The loss of vision or consciousness which may occur when a pilot pulls too many positive Gs. It is caused by an insufficient blood supply to the head.

BLIP
A small dot which appears on a pilot's radar. Each blip represents an aircraft or launched weapon.

BOGEY
An unidentified airborne intruder.

BOLTER
When an aircraft misses all of the arresting cables during a carrier landing which resulted in an unintentional touch and go.

BOMBSIGHT
A physical or optical indicator for aiming free-fall weapons.

BOW

The front of a ship. Also known as Fore.

BREAK TURN

A maneuver accomplished by rolling the airplane 90 degrees and pulling back on the stick.

BUG OUT

Quickly leave the area of an engagement.

BVR

Beyond Visual Range.

C

C3

Command, Control and Communications.

CALLSIGN

The codename or nickname for a pilot.

CANOPY

The clear bubble-like covering which seals the top of the cockpit, protecting the pilot while providing an unobstructed view of the surrounding skies.

CAP

See Combat Air Patrol.

CARQUAL

The qualifications necessary for a pilot to attempt a landing on a aircraft carrier. Short for "carrier qualification."

CARRIER LANDING

Maneuvering an airplane so its arrestor hook engages one of four cables located within a 120 foot section of a carrier's flight deck.

CARRIER LANDING SYSTEM

The information display system used for carrier landings.

CAS

See Close Air Support.

CAT

See Catapult.

CATAPULT

Device for accelerating an aircraft to take-off speed in 2-seconds and 300 feet.

CATCC

Carrier Air Traffic Control Center.

CCA

Carrier Controlled Approach.

CCIP

Continuously Computed Impact Point.

CG

Center of Gravity.

CHAFF

Metallic foil packs ejected by an airplane in an effort to confuse an incoming radar-guided missile.

CHARLIE

A spoken signal from the Air Boss which means "clear to land."

CLEAR READ

Strong and identifiable signal on a radar scope.

CLOSE AIR SUPPORT

Mission order instructing a pilot to provide air cover for land units by engaging enemy fighters and ground positions.

CLOSING SPEED

The rate at which the target is approaching or pulling away from your aircraft.

CLS

Carrier Landing System.

CO

Commanding Officer.

COMBAT AIR PATROL

Mission type instructing the pilot to engage any aircraft crossing into his patrol zone. It is generally a constant patrol over a valuable asset such as an airfield.

COMMS

Communications.

CONTRAILS

The thin vapor trails left by an aircraft or missile.

CONTROL INPUTS

The controlling influences a pilot exerts on an aircraft's control surfaces.

CONTROL SURFACES

The moving, pilot-controllable parts of the airframe, including flaps, ailerons, rudders and elevators.

CONTROL TOWER

An airport structure housing air traffic controllers.

CRT

Cathode Ray Tube.

CSS

Control Stick Steering.

CV

Aircraft carrier.

CVN

Nuclear powered aircraft carrier.

CVA

Aircraft carrier approach.

CVS

Course Vectoring Symbols.

D

DECM

Defensive Electronic Countermeasures.

DELTA

The designation used for a mission wing that will be providing BarCap or TarCap air cover for bombers and other airplanes.

DEST

Destination.

DF
Direction Finder.

DFM
Dog Fight Mode.

DIVE BOMBING
Deliver bombs by placing the airplane on a collision course with the target, typically in a dive.

D/L
Data Link.

DMA
The Defense Mapping Agency collects terrain data and information.

DOGFIGHT
The aerial maneuvering by at least two planes in combat.

DRAG
Force created by an Airfoil moving through atmosphere, opposite to the direction of motion.

DROP
Release a bomb or to lose altitude suddenly.

DRONE
Unmanned airplane used as a target, research vehicle, or for reconnaissance.

DTG
Degrees To Go.

DUTY ROSTER
The list of available pilots for missions.

E

ECM
Electronic Countermeasures used to defeat enemy attacks.

ECM JAMMER
A device used to confuse or "jam" an enemy's radar and weapons.

EID
Electronic Identification.

ELEVATOR
Hinged portion of the horizontal stabilizer, which adds or subtracts lift from the tail, changing the pitch attitude of the aircraft.

ESCORT
Mission order instructing a pilot to fly with and protect another aircraft or unit.

ETA
Estimated Time of Arrival.

EVASIVE ACTION
Maneuvers intended to deny an opponent the opportunity to fire a weapon, or to avoid an incoming missile or bullet.

EWS
Early Warning System.

F

FCLP
Field Carrier Landing Practice

FIGHTER SWEEP
Mission order instructing a pilot to search out and destroy enemy fighters and aircraft.

FLAK
Shrapnel fired into the air by AAA for the purpose of destroying enemy aircraft.

FLAPS
The hinged portion of an aircraft's wings which can be used to increase lift.

FLARE
Incendiary device ejected by an airplane in an effort to confuse an incoming infrared-seeking missile.

FLIGHT DECK
The top deck on an aircraft carrier. It is where planes are launched and recovered.

FLY-BY-WIRE
A modern aircraft design which sends input from the pilot's stick into a flight computer which then controls movement.

FM
Frequency Modulation.

FOODFIGHT
Multi-plane aerial combat engagement. See also Furball.

FORE
The front of a ship. Also known as Bow.

FOV
Field-Of-View

FOX ONE
Pilot call on launching a radar guided missile.

FOX TWO
Pilot call on launching a Sidewinder.

FQ
Forward Quarter.

FURBALL
Multi-plane aerial combat engagement. See also Foodfight.

FWD
Forward.

G

G
Acceleration in gravity units. See G-Force.

GAI
See Ground-Alert Interceptor.

GAMMA
The designation used for a mission wing that will be conducting Fighter Sweeps.

GBL
See Gun Boresight Line.

GBU
Guided Bomb Unit.

GCI
Ground-Controlled Intercept.

G-FORCE
A measure of the force of acceleration, in velocity or direction, induced by an airplane and its pilot.

GLIDE PATH
The imaginary corridor a plane travels on final approach.

GREYOUT
Greyout occurs when gravitational stresses impair the flow of blood to your brain. Loss of vision and, eventually, unconsciousness, can occur when you pull heavy G's.

GROUND ALERT INTERCEPTION
Ground Alert Interception is a mission order which scrambled fighters from the ground to intercept incoming threats.

G SUIT
The flight suit worn by pilots to counteract the G forces experienced in flight.

GUN BORESIGHT LINE
The imaginary line through the center of the gun barrel. Used in calculating lead angle. Also known as GBL.

H

HANGAR
The deck on an aircraft carrier that is located just beneath the Flight Deck.

HARD DECK
Lower altitude limit usually imposed during training.

HARM
A high speed anti-radiation missile, this weapon utilizes a passive seeker to detect and home in on hostile radars.

HCU
Hand Control Unit.

HDG
The direction that the plane is flying. See Heading.

HEADING
The direction of travel expressed in 360 degree increments from North (such that due South is 180). Also HDG.

HEAD-UP DISPLAY.
An optical device delivering important information to a pilot in his forward line-of-sight. Also HUD.

HEAT-SEEKING MISSILE
An anti-aircraft missile that detects and attempts to follow a source of Infrared radiation, typically the exhaust.

HEAT SIGNATURE
The Infrared heat given off by an object, usually an aircraft.

HIT
A disabling blow to an aircraft.

HORIZONTAL SITUATION DISPLAY
Two-dimensional representation of relative target and threat positions. Also HSD.

HORIZONTAL STABILIZER
The horizontal section of the tail, which provides downward lift to balance the weight of the nose.

HOT START
A start that exceeds normal starting temperatures.

HSD
See Horizontal Situation Display.

HSI
Horizontal Situation Indicator.

HUD
See Head-Up Display.

HUNG ORDNANCE
Bombs or missiles that failed to separate from the aircraft when released. Makes for a potentially dangerous landing.

HUNG START
A start that results in a stagnated rpm and temperature.

I

IAS
Indicated Airspeed

IADS
Integrated Air-Defense System

IFF
Identification, Friend or Foe

ILS
Instrument Landing System

IMMELMANN
A flight maneuver composed of a vertical quarter-loop followed by a partial roll, and finished with a second quarter-loop and half-roll.

INCOMING
Any threat, typically a missile, approaching an airplane.

INFRARED
An invisible portion of the electromagnetic spectrum emitted by heated objects. One source of tracking information for anti-aircraft weapons.
Also known as IR.

INS
Inertial Navigation System

IN THE GROOVE
An aircraft correctly positioned on final approach.

IN THE SADDLE
Astride an opponent's "six", ready for attack.

INSIDE LOOP
A maneuver whereby an airplane continually raises its nose to complete a vertical circle while keeping its lateral centerline horizontal. Used to reverse positions with an opponent directly behind.

INVERTED FLIGHT
Flying upside-down.

IR
See Infrared.

IRCM
Infrared Countermeasures used to confuse Heat Seeking Missiles.

J

JAMMING
The act of confusing the an enemy's radar tracking system. See ECM.

JINK
Any maneuver used to make the distance or angle between opponents less advantageous to the attacker.

K

KAPPA
The designation used for a mission wing which will be providing CAS.

KCAS
Knots Calibrated Airspeed.

KFT
Units of measure in thousands of feet.

KIAS
Knots Indicated Airspeed.

KILL
Mortal blow to an opposing aircraft.

KILL BOARD
The board on a carrier where the pilots' confirmed kills are posted.

KNOT
Unit of speed, one nautical mile per hour, which is about 1.15 miles per hour.

KTAS
Knots True Airspeed.

KTS
See Knots.

L

LAG PURSUIT
A combat maneuver where the pursuing pilot aims the nose of his aircraft just behind the enemy's position and follow it through a turn.

LANDING BOARD
The board on a carrier where the pilots' landings are posted and rated.

LANDING SIGNAL OFFICER
Standing on the carrier deck, this man is in constant contact with the pilot of an aircraft about to land. He both guides and grades the landing. Also known as LSO.

LCK
See Lock.

LCOS
Lead-Computing Optical Sight.

L/D
Lift-to-Drag ratio.

LDB
See Low Drag Bomb.

LE
Leading Edge.

LEAD PURSUIT
A combat maneuver where the pursuing pilot aims the nose of this aircraft just ahead of the enemy's plane.

LIFT
Force created by an Airfoil moving through atmosphere, perpendicular to the direction of motion.

LOCK
Usually referring to a missile lock. A lock is required for a high probability of success in a missile attack. Also known as LCK.

LOCK ON
Radar concentrating on target in attack mode. Acquiring a target for the purpose of attacking it.

LOGBOOK
A pilot's record of flying achievements including flight hours, takeoffs, landings, and maneuvers mastered.

LOOP
Any of a class of maneuvers in which an aircraft describes a closed filigree (usually a circle), its pitch attitude passing evenly through 360 degrees.

LOS
Line Of Sight.

LOW DRAG BOMB
Free-fall ordnance of especially low aerodynamic drag.

LSO
See Landing Signal Officer.

M

M
See Mach

MAN
See Manual.

MACH
Velocity as compared to the local speed of sound. For example, Mach 1.5 is one and one-half times the speed of sound at the current barometric pressure and temperature. Also known as M.

MANUAL
A system which is operated by manual control. Also refers to a pilot's act of switching from automatic to manual controls. Also known as Man.

MARSHAL POSITION
An area aft of a carrier where aircraft waiting to land assemble to await their turn.

MAV
See Maverick.

MAVERICK
An effective air-to-surface weapon which utilizes a TV seeker or laser-guidance to lock and track targets. It can reliably hit moving targets at long range. Also known as MAV.

MEATBALL
Glide slope image of mirror landing system.

MIA
Missing In Action.

MiG
Mikoyan/Gurevich. The Russian manufacturer of many Eastern Bloc fighters.

MILITARY THRUST
The current aircraft's full power. Speed settings are given in percentages of full military thrust.

MINIMUM CONTROLLABLE AIRSPEED
The speed below which your control surfaces do not generate significant force to control the plane.

MK84
A two thousand pound bomb.

MK82
A five hundred pound bomb.

MSL
Mean Sea Level.

MRM
Medium Range Missile.

MULTI-FUNCTION DISPLAY
Device used to show selected information. Also known as MFD.

N

NEGATIVE Gs
The gravitational force experienced by a pilot in a rapid descent.

NM
Nautical Miles

NFO
Naval Flight Officer

O

OBC
On-Board Check.

O'CLOCK
A representation of position relative to an airplane corresponding to a clock face. The nose of the plane is considered to be 12:00 and the rear is 6:00.

OMEGA
The designation used for a mission wing that will be conducting air defense suppression attacks in preparation for bombing runs. Also known as Wild Weasel.

ON BEAM
Properly aligned on an ILS approach.

ON YOUR SIX
Pilot jargon referring to the location directly behind an airplane. See Six.

OPERATIONS
The main control area on an aircraft carrier. It is where command decisions are made about overall tactics, schedules, and missions.

OPS
See Operations.

OPTICALLY GUIDED
A missile or bomb that is directed to its target, via radio control, by a person viewing the target on long-range TV.

OVERSHOOT
The act of flying past an enemy plane. An overshoot can be extremely dangerous since it exposes the plane's Six to enemy attack.

OVERTAKE
Closing speed irrespective of relative aspect or heading.

R

PAINTED
The act of being illuminated by radar.

PAYLOAD
The weapons carried by an aircraft.

PD
See Pulse-Doppler.

PDCP
Pilot's Display Control Panel.

PH
See Phoenix missile.

PHOENIX MISSILE
An air-to-air missile which uses active-radar to lock onto targets. It is the biggest of the American air-to-air missiles

PICKLING
The act of selecting a weapon.

PIPPER

Optical representation of aiming point for weapon in the HUD.

PITCH

Up or down. The angle of the plane's nose-to-tail axis relative to horizontal. To raise or lower the nose of an aircraft in flight.

PORT

The left-side of a naval vessel.

POSITIVE Gs

The gravitational force experienced by a pilot in a rapid ascent.

POW

Prisoner of War.

PULLING LEAD

The act of aiming a weapon ahead of an opponent's current position to improve the probability of a Hit.

PULSE DOPPLER

A kind of radar which emits a pulsed signal.

PURE PURSUIT

A combat maneuver where the following pilot mimics the enemy's tactics

Q

QUARTERDECK

The stern area of a ship's upper deck. It is frequently the part of a ship which is set aside for ceremonial or official use.

QUARTERMASTER

A petty officer who attends to a ship's helm, binnacle and signals.

R

RADAR-GUIDED MISSILE

A missile that is guided to a target by reflection of radio signals off the target.

RANGE

Distance to a target.

RAPID DEPLOYMENT FORCE

A branch of the United Nations' military which was formed to respond quickly to aggressive conduct. Its naval air wing is based on the U.N.S. Peacekeeper, a Nimitz-class aircraft carrier. Also known as RDF or UNRDF.

RATE OF CLOSURE

Rate of decrease in distance to a target.

RATE OF DESCENT

Rate of loss of altitude, expressed in feet per minute.

RED FLAG

Tactical exercises held at Nellis AFB.

REDLINE

For a given airplane, the airspeed above which it is unsafe to fly. "Redlining" the plane may overstress or even damage structural elements in the plane.

REDOUT

The loss of vision or consciousness which may occur when a pilot pulls too many negative Gs. It is caused by an overabundant blood supply to the head.

RECON

Reconnaissance.

RDF

See Rapid Deployment Force.

RDR

Radar.

RIO

Radar Intercept Officer.

RIX

Recovery duty officer.

ROLL

The angle of the plane's wings relative to horizontal.

ROE

Rules Of Engagement.

ROOKIE

A new or inexperienced pilot.

ROT

Range On Target.

RQ

Rear Quarter.

RUDDER

The hinged, movable section of the plane's vertical stabilizer used to control the aircraft's yaw. As a verb, meaning to angle the rudder in a particular direction.

RWR

Radar-Warning Receiver.

S

SAM

Surface-to-Air Missile. An anti-aircraft weapon.

SAR

Search And Rescue. Generally referring to a mission.

SCISSORS

A dangerous series of nose-to-nose turns and overshoots where each aircraft tries to get behind the other one. Also known as ZigZag.

SCRAMBLE

Ground and flight crews racing to get airplanes airborne, typically for a military emergency.

SERVICE CEILING
The high altitude limit on an aircraft. Exceeding the service ceiling may overstress or damage structural elements in the plane.

SIDEWINDER
An Infrared-homing air-to-air missile. The Sidewinder has scored more ATA kills than any other missile.

SIGMA
The designation used for the AWACS mission wing.

SIGNAL CHARLIE
The signal called by the Air Boss aboard a carrier to inform a pilot that he is clear to land.

SIX
Pilot jargon for the location direction behind an airplane. See O'Clock.

SMART WEAPON
An air-to-ground weapon which can automatically lock onto and guide itself towards a target.

SORTIE
A mission.

SP
See Sparrow.

SPARROW
A radar-guided air-to-air missile. During combat, the missile Paints its target and homes in on the signal.

SPEEDBRAKE
A control surface that is extended into the airstream of an aircraft to increase drag and thereby reduce velocity.

SPIN
Any maneuver in which one wing is stalled and one is not.

SPLIT-S
A maneuver accomplished by rolling inverted and performing one-half of a loop, ending upright-side-up but traveling in the opposite direction at a lower altitude.

SPOOF
Successfully redirecting an incoming anti-aircraft missile.

SRM
Short Range Missile

STALL
A loss of lift experienced by a plane. It is general caused by either inadequate speed or too steep an AOA. See also Spin and Stall Speed.

STALL SPEED
The speed at which an aircraft will Stall.

STARBOARD
The right-side of a naval vessel.

STBY
Standby.

STICK
A control in the cockpit which controls the elevators (forward/back axis) and the ailerons (left/right axis).

STEM
The front of a ship. Also known as Bow or Fore.

STERN
The rear of a ship. Also known as Aft.

STORES
Anything that can be loaded on an aircraft, including weapons.

STORES MANAGEMENT DISPLAY
A graphic representation of the status of weapons and supplies.

STT
Single Target Tracking.

SUPERCRUISE
The ability to fly at speeds in excess of Mach One, without using an afterburner.

S/W
See Sidewinder.

T

TAA
Target-Aspect Angle.

TAIL HOOK
See Arrestor Hook.

TARCAP
See Target Combat Air Patrol.

TARGET COMBAT AIR PATROL
Mission type instructing the pilot to engage any aircraft crossing into his patrol zone. This order is used to protect friendly bombers who are engaging a target from counterattacks by enemy fighters.

TARGET BEARING
The position of the target as compared to the front of your plane. It is expressed in 360 degree increments where the nose of your plane is 0 and your Six is 180.

TARGET DESIGNATOR
An optical "box" surrounding a selected target as viewed through the HUD.

TARPS
Tactical Air Reconnaissance Pod System.

TAS
True Airspeed.

TAXIING
The act of steering an aircraft on the ground.

THERMAL
Air rising or falling due to temperature, and thus pressure, differentials; useful in soaring.

THETA
The designation used for a mission wing that will be conducting special operations such as recon, deliveries and such.

THROTTLE
The control in the aircraft's cockpit which allows the pilot to adjust thrust.

TID
Tactical Information Display.

TOF
Time Of Flight.

TONE
An audio cue emitted by a missile tracking system to indicate that the missile has Locked on the target and is ready to be fired.

TOWER
See Control Tower.

TR
Turn Rate.

TRANSPONDER
A device which transmit a coded response (that may include nationality, altitude, speed, and heading) to friendly units.

TRAP
The act of successfully capturing a cable with an arresting hook and landing on an aircraft carrier.

U

UN/C
Pilot jargon for joint operations of the United Nations and Chilean government.

UNRDF
The United Nations Rapid Deployment Force. See Rapid Deployment Force.

UNS
United Nations Ship.

USGS
The United States Geological Survey. This government agency collects terrain data and information.

V

VEC
Vector.

VERT
Vertical.

VID
Visual Identification.

V/STOL
An aircraft capable of vertical short-takeoffs and landings.

VELOCITY
An aircraft's airspeed, measured in either nautical miles or Mach.

VERTICAL HALF-LOOP
The first half of an inside loop, terminated at the top, inverted with a half-roll back to right-side-up and level flight.

VISUAL CONFIRMATION
Sighting of a bogey aircraft to determine nature and threat.

VULCAN
A rapid fire rotary cannon used on many fighters. Currently known as M61A1.

W

WAYPOINT
The different spots or target to which pilots must fly during a mission.

WILD WEASEL
Mission order instructing a pilot to attack enemy air defense positions, usually in preparation for a bombing attack. Also known as Omega.

WINGMAN
The pilot assigned to fly an aircraft in support of another aircraft.

WCS
Weapons Control System.

WHEEL BRAKE
The locking mechanism on an aircraft's wheels to prevent the plane from rolling.

WOD
Wind over the Deck.

X

X-SECTION
The cross section of an aircraft or other object.

Y

YAW
The angle of the plane's nose-to-tail axis relative to its direction of motion.

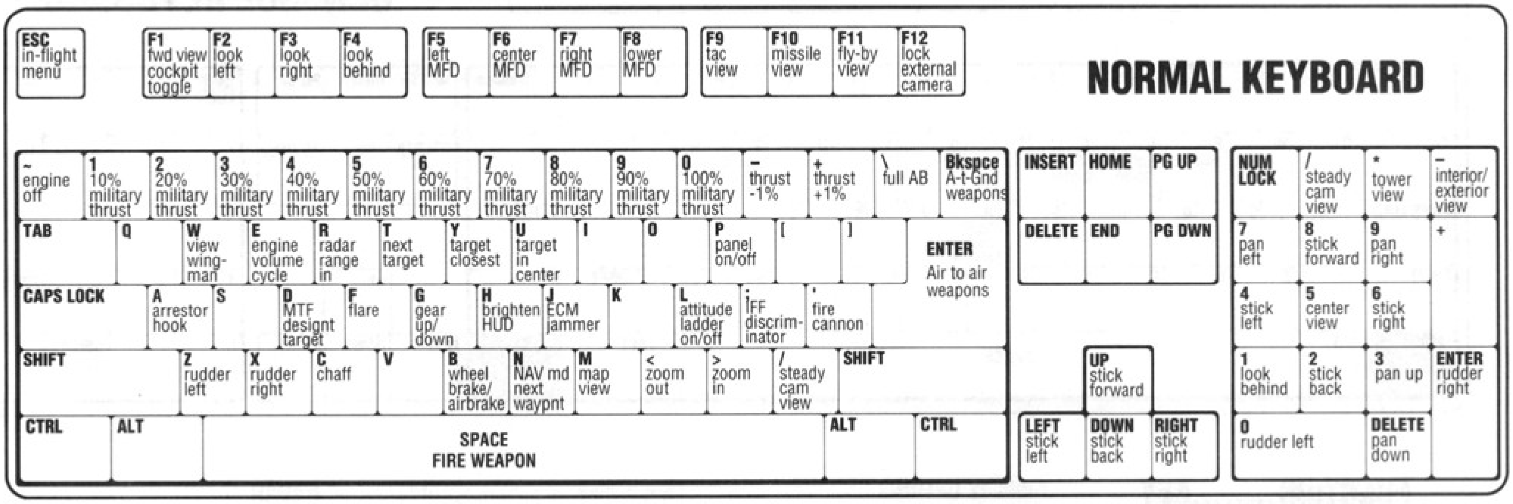
YO-YO
An offensive combat maneuver used to keep inside an enemy's turn.

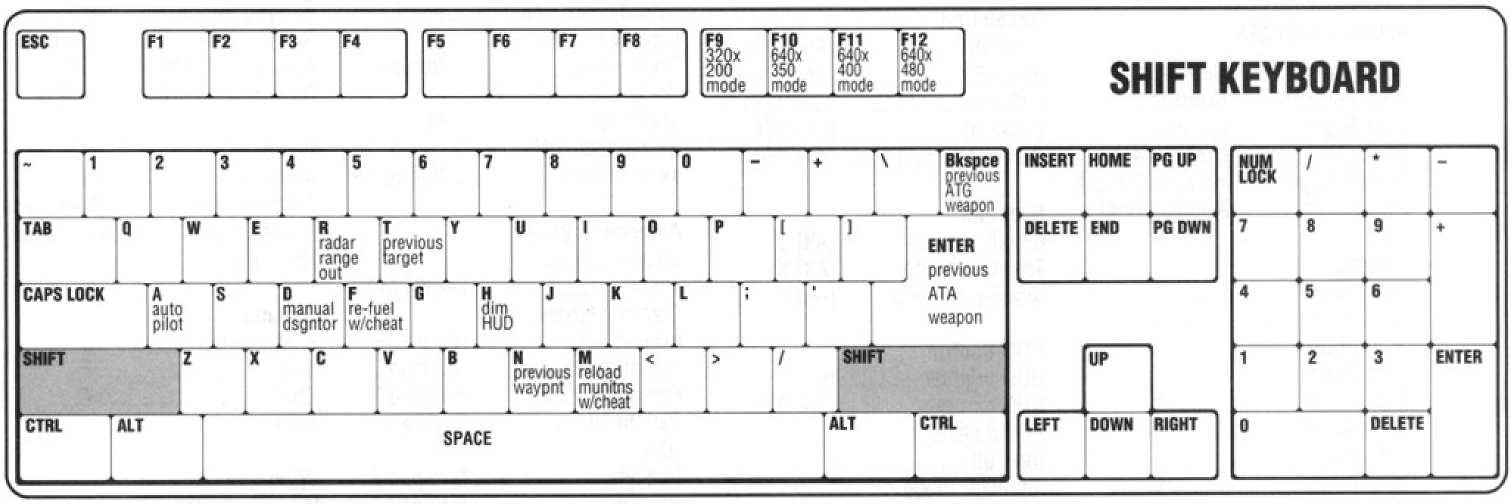
Z

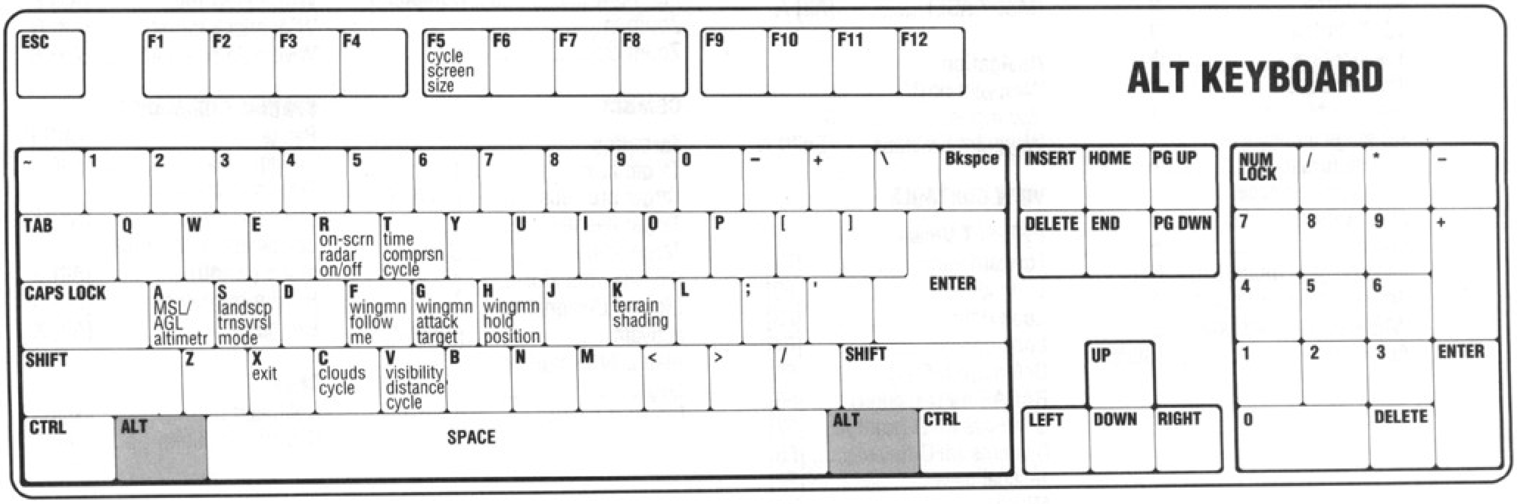
ZONE
The primary mission area.

APPENDIX

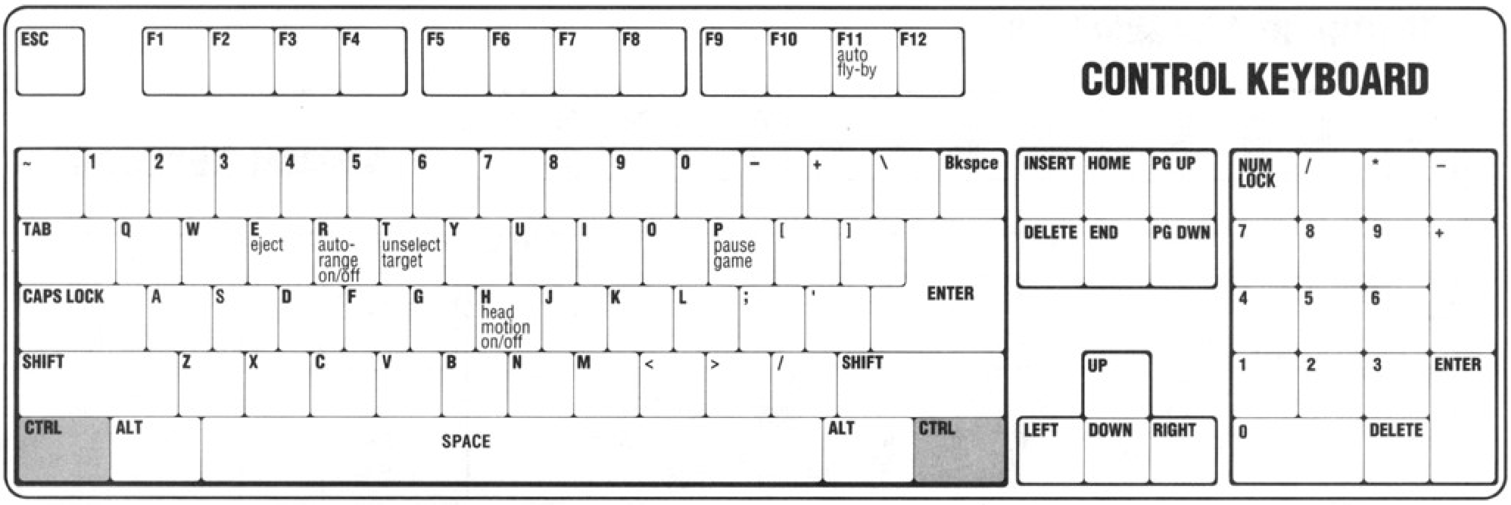
KEYBOARD ASSIGNMENTS


NORMAL KEYBOARD
ESC in-flight menu
F1 fwd view cockpit toggle
F2 look left
F3 look right
F4 look behind
F5 left MFD
F6 center MFD
F7 right MFD
F8 lower MFD
F9 tac view
F10 missile view
F11 fly-by view
F12 lock external camera
~ engine off
1 10% military thrust
2 20% military thrust
3 30% military thrust
4 40% military thrust
5 50% military thrust
6 60% military thrust
7 70% military thrust
8 80% military thrust
9 90% military thrust
0 100% military thrust
– thrust -1%
+ thrust +1%
\ full AB
Bkspce A-t-Gnd weapons
TAB
Q
W view wing-man
E engine volume cycle
R radar range in
T next target
Y target closest
U target in center
I
O
P panel on/off
[
]
ENTER Air to air weapons
CAPS LOCK
A arrestor hook
S
D MTF designt target
F flare
G gear up/down
H brighten HUD
J ECM jammer
K
L attitude ladder on/off
; IFF discrim-inator
' fire cannon
SHIFT
Z rudder left
X rudder right
C chaff
V
B wheel brake/ airbrake
N NAV md next waypnt
M map view
< zoom out
> zoom in
/ steady cam view
SHIFT
CTRL
ALT
SPACE FIRE WEAPON
ALT
CTRL
INSERT
HOME
PG UP
DELETE
END
PG DWN
UP stick forward
LEFT stick left
DOWN stick back
RIGHT stick right
NUM LOCK
/ steady cam view
* tower view
– interior/ exterior view
7 pan left
8 stick forward
9 pan right
+
4 stick left
5 center view
6 stick right
1 look behind
2 stick back
3 pan up
ENTER rudder right
0 rudder left
DELETE pan down


SHIFT KEYBOARD
ESC
F1
F2
F3
F4
F5
F6
F7
F8
F9 320x 200 mode
F10 640x 350 mode
F11 640x 400 mode
F12 640x 480 mode
~
1
2
3
4
5
6
7
8
9
0
–
+
\
Bkspce previous ATG weapon
TAB
Q
W
E
R radar range out
T previous target
Y
U
I
O
P
[
]
ENTER previous ATA weapon
CAPS LOCK
A auto pilot
S
D manual dsgntor
F re-fuel w/cheat
G
H dim HUD
J
K
L
;
'
SHIFT
Z
X
C
V
B
N previous waypnt
M reload munitns w/cheat
<
>
/
SHIFT
CTRL
ALT
SPACE
ALT
CTRL
INSERT
HOME
PG UP
DELETE
END
PG DWN
UP
LEFT
DOWN
RIGHT
NUM LOCK
/
*
–
7
8
9
+
4
5
6
1
2
3
ENTER
0
DELETE


ALT KEYBOARD
ESC
F1
F2
F3
F4
F5 cycle screen size
F6
F7
F8
F9
F10
F11
F12
~
1
2
3
4
5
6
7
8
9
0
–
+
\
Bkspce
TAB
Q
W
E
R on-scrn radar on/off
T time comprsn cycle
Y
U
I
O
P
[
]
ENTER
CAPS LOCK
A MSL/ AGL altimetr
S landscp trnsvrsl mode
D
F wingmn follow me
G wingmn attack target
H wingmn hold position
J
K terrain shading
L
;
'
SHIFT
Z
X exit
C clouds cycle
V visibility distance cycle
B
N
M
<
>
/
SHIFT
CTRL
ALT
SPACE
ALT
CTRL
INSERT
HOME
PG UP
DELETE
END
PG DWN
UP
LEFT
DOWN
RIGHT
NUM LOCK
/
*
–
7
8
9
+
4
5
6
1
2
3
ENTER
0
DELETE

KEYBOARD ASSIGNMENTS (CONT.)


CONTROL KEYBOARD
ESC
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11 auto fly-by
F12
~
1
2
3
4
5
6
7
8
9
0
-
+
\
Bkspce
INSERT
HOME
PG UP
NUM LOCK
/
*
-
TAB
Q
W
E eject
R auto-range on/off
T unselect target
Y
U
I
O
P pause game
[
]
DELETE
END
PG DWN
7
8
9
+
CAPS LOCK
A
S
D
F
G
H head motion on/off
J
K
L
;
'
ENTER
4
5
6
SHIFT
Z
X
C
V
B
N
M
<
>
/
SHIFT
UP
1
2
3
ENTER
CTRL
ALT
SPACE
ALT
CTRL
LEFT
DOWN
RIGHT
0
DELETE

FUNCTION........KEY

FLIGHT CONTROLS

Stick Back	Numpad 2
Stick Forward	Numpad 8
Stick Right	Numpad 6
Stick Left	Numpad 4
Rudder Right	Numpad [Enter]
Rudder Left	Numpad [Ins]

Throttle

10% thrust	1
20% thrust	2
30% thrust	3
40% thrust	4
50% thrust	5
60% thrust	6
70% thrust	7
80% thrust	8
90% thrust	9
100% thrust	0
1% increase	+
1% decrease	-
Full Afterburner	\
AB stage increase (100% thrust)	+
AB stage decrease (100% thrust)	-
Engine off	~
Landing gear (up/down)	G
Arrestor hook (up/down)	A
Wheel Brake / Airbrake	B
Autopilot	[Shift A]

DISPLAY OPTIONS

Resolution

320x200	[Shift] [F9]
640x350	[Shift] [F10]
640x400	[Shift] [F11]
640x480	[Shift] [F12]
Screen size cycle	[Alt] [F5]

Features

Clouds	[Alt] C
Terrain shading	[Alt] K
Visibility distance	[Alt] V

HUD Control

HUD brighter	H
HUD dimmer	[Shift] H
Altitude ladder (on / off)	L
Altimeter mode (MSL / AGL)	[Alt] A

Navigation

Waypoint next/ Nav mode	N
Waypoint previous	[Shift] N

VIEW CONTROLS

PRE-SET Views

Forward view	[F1]
Look left	[F2]
Look right	[F3]
Look behind	[F4]
Defensive MFD (left)	[F5]
RADAR MFD (center)	[F6]
Offensive MFD (right)	[F7]
Systems MFD (lower)	[F8]
Tactical view	[F9]
Missile view	[F10]
Fly-by-view	[F11]
"Steady cam" view	[F12]
View Wingman	W
Tower view	Numpad*
Cockpit panel (on/off)	P
Map view	M
Switch internal/ external view	Numpad -

Adjustable Views

Virtual cockpit enable	joystk btn 1
Switch internal/ external view	Numpad -
Center view	Numpad 5
Pan up	Numpad 3
Pan down	Numpad [Del]
Pan left	Numpad 7
Pan right	Numpad 9
Zoom in	>
Zoom out	<

COMBAT

Targeting

Target next	T
Target previous	[Shift] T
Target nearest	Y
Target center	U
IFF Discriminator	;
Manual Designator activate	[Shift] D
Manually Designate target	D
Deselect target	[Ctrl] T

RADAR

Range zoom in	R
Range zoom out	[Shift] R
Autorange (on/off)	[Ctrl] R
On-screen (on/off)	[Alt] R

Weapons

Air to Air	[Enter]
Air to Ground	[Backspace]
Fire Weapon	[Spacebar]
Fire Cannon	"

Defense

ECM jammer	J
Flares	F
Chaff	C
Eject	[Ctrl] E

Wingman

WM: follow me	[Alt] F
WM: attack target	[Alt] G
WM: hold position	[Alt] H

SPECIAL COMMANDS

Pause	[Ctrl] P
In-Flight menu	[Esc]
Time compression (2:1, 3:1, off)	[Alt] T
Landscape Transversal mode (on/off)	[Alt] S
Head movement	[Ctrl] H
Exit game	[Alt] X

Cheats

Unlimited fuel	[Shift] F
Reload munitions	[Shift] M

ILS AND CLS COMPONENTS

Most pilots consider landings among their most challenging tasks. Even basic skills like finding the airport and aligning with the runway present difficulties. Pilots use Instrument Landing Systems (ILS) to simplify runway landings at airports. Identical systems aboard aircraft carriers are called Carrier Landing Systems (CLS).

TRANSMITTING EQUIPMENT

An ILS/CLS has five externally located components that transmit radio signals to your aircraft's navigation system:

Initial Approach Fix (IAF)1

Final Approach Fix (FAF)1

Terminal Waypoint (above the touchdown zone)2

Localizer

Glide Slope

The first three items are waypoints. Waypoints are navigation aids that guide pilots through the sky. Think of them as points in space your navigation system can sense. The navigation system displays information about how to find the waypoint. It indicates the waypoint's distance and which direction you should turn to fly toward it. (See the section "Basic Waypoint Navigation.")

INITIAL APPROACH FIX

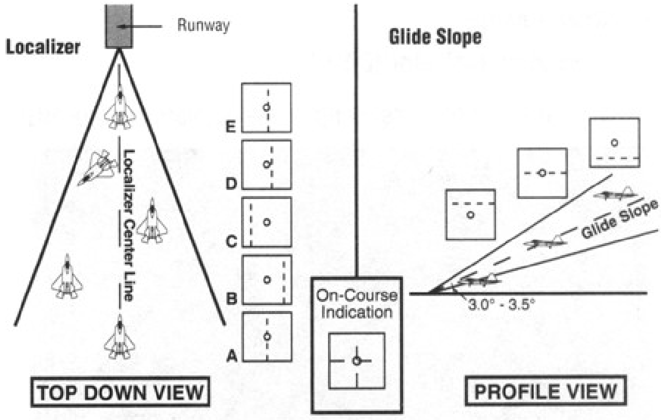
Approaches to the runway begin from the IAF. It lies 10 miles from the runway on an imaginary line that extends from the runway's centerline. Pilots use the IAF as a checkpoint to establish proper alignment and configuration for landing. An approach is off to a good start if several crucial factors are adjusted at the IAF: aircraft configuration (i.e. gear extended), airspeed, heading, and altitude.

FINAL APPROACH / TERMINAL WAYPOINT

Both the FAF and terminal waypoint lie along the same imaginary line as the initial approach fix. The FAF is 3 miles from the runway and the terminal waypoint lies over the touchdown zone. These waypoints serve as checkpoints during an approach. The terminal waypoint allows your navigation system to display your distance from the runway anytime during the approach.

LOCALIZER

Localizers are navigation aids that guide the pilot's lateral path as he approaches the runway. Unlike waypoints, localizers transmit a course, not a single point in space.



Think of the localizer as an extra sensitive instrument guiding pilots along a course between three waypoints: the IAF, FAF and terminal waypoints. These three points lie along the localizer's centerline.

GLIDE SLOPE

Like the localizer, the glide slope helps pilots find the runway. However, the glide slope provides vertical instead of lateral course guidance. Using the glide slope, a pilot can safely and precisely descend from his cruising altitude to the runway (see the above figure). This descending vertical path is called the glide slope.

INSTRUMENTATION

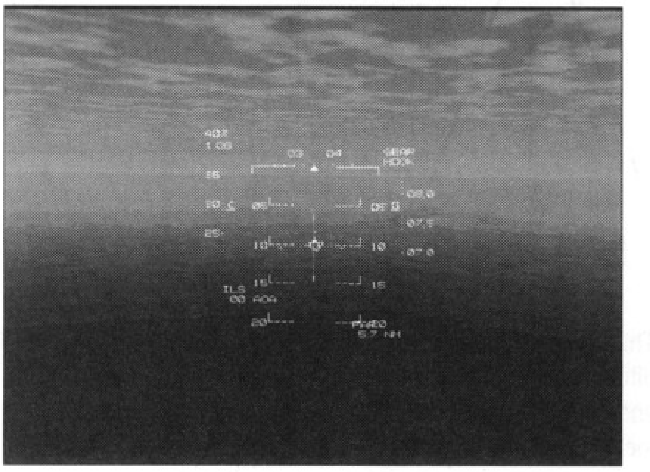
In addition to the five externally located components, the cockpit contains three receiving instruments that display course information:

Navigation Director

Glide Slope Needle

Course Deviation Indicator (CDI)

Information from all of these components appears on your HUD:



NAVIGATION DIRECTOR

The navigation director depicts the location of the IAF, FAF, and terminal waypoints like any other waypoint (See flight training lesson #3). It simply "points" to the currently selected waypoint.

GLIDE SLOPE INDICATOR

The glide slope indicator is a horizontal dotted line that guides a pilot along the glide slope during an approach. The glide slope indicator moves up and down the HUD indicating your position relative to the glide slope. We say the glide slope indicator is deflected when it is not centered in the HUD. To help you center the indicator a small circle, called the Off Course Indicator (OCI), appears in the HUD when you activate the ILS.

Reading the glide slope indicator is simple:

When it is above the OCI, the glide slope is above you;
you are TOO LOW.

When it is below the OCI, the glide slope is below you;
you are TOO HIGH.

The magnitude of needle deflection indicates your distance from the glide slope. For example, a full-scale deflection to the top of the HUD indicates the glide slope is well above you.

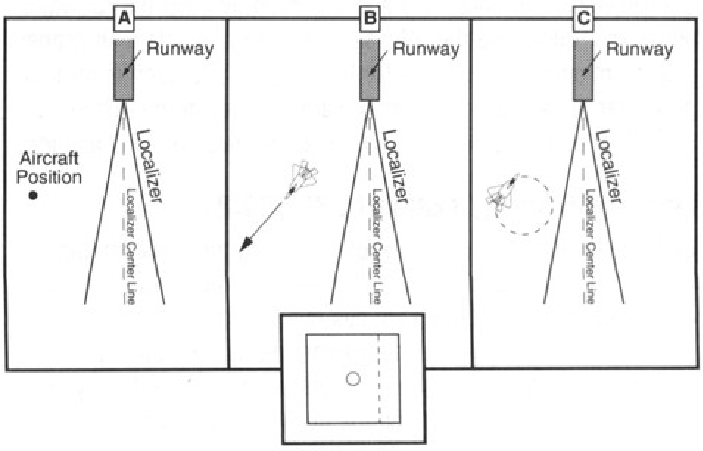
COURSE DEVIATION INDICATOR

The CDI is a vertical dotted line on the HUD guiding the pilot to the localizer's centerline. The CDI moves left to right indicating your position relative to the localizer's centerline. Remember, the localizer centerline is an imaginary line that extends out from the runway.

Like the glide slope, both magnitude and direction of CDI deflection provide information about your location. The direction of CDI deflection indicates whether you are left or right of the localizer's centerline. The magnitude of CDI deflection indicates your distance from the localizer's centerline (see illustration on preceding page). For example, a full-scale CDI deflection to the left indicates that you are far right of course.

It is important to understand that the aircraft's heading does not affect the CDI's position; the CDI only changes when the aircraft's position changes.

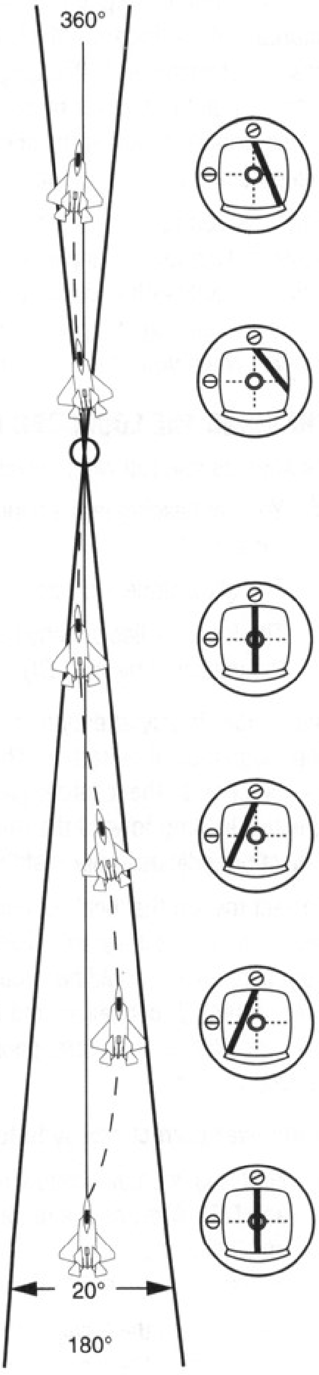
This subtle and important difference confuses many beginners. Imagine the CDI deflected to the right. It is correct to say, "you are to the left of course." Conversely, it is not necessarily correct to say, "the course lies to your right." This makes sense if you imagine a bird's eye view of the approach with the runway near the "top" of your image. Visualize an aircraft positioned on the left side of the localizer's centerline. The CDI's location (deflected to the right) indicates that the localizer lies to the right. The following figure shows three different scenarios. Each scenario yields identical CDI indications.



CDI Indication
for all three
scenarios

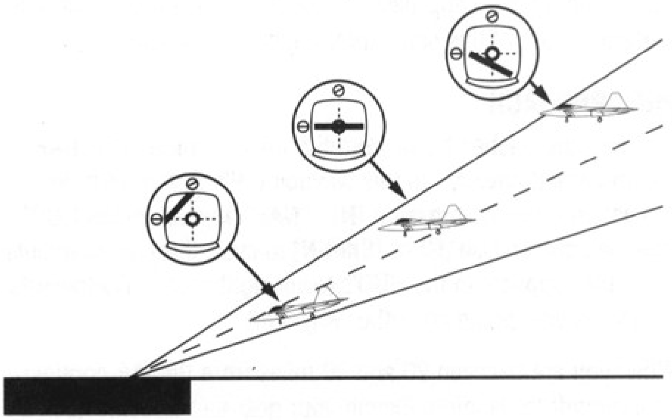
Independent of your aircraft's heading, the CDI needle remains deflected to the right since the aircraft is right of the localizer. However, most beginners don't visualize the big picture resulting in incorrect CDI interpretations. They see the CDI deflected to the right prompting a right turn. Deceptively, the localizer is not necessarily to the right. Remember that the CDI provides course information—not turning information. A deflected CDI may prompt you to adjust your course (by turning), but you must decide on your own which direction to turn or if a turn is even necessary. Panel B above shows an arrangement where the localizer lies off the pilots left wing but the CDI is deflected to the right.

Most commonly, beginners err by simply turning in the direction of CDI deflection. Often, this turn results in a circular path leaving the CDI unaffected (see panel C above). Instead of just turning, you should assume a heading that yields an intercept course with the localizer and this may involve a turn. In the following figure the deflected CDI merits no heading change. Initially, one may incorrectly turn right since the CDI is deflected to the right.



In fact, a right turn would further misalign the approach. The pilot should continue on his current heading.

The following diagram shows some possible aircraft locations and their corresponding CDI and glide slope indications.



The ILS/CLS may seem confusing at first but a few practice trials, along with the following suggestions and the ILS CHECKLIST (in the section "Using the ILS/CLS") will make landings fun.

USING THE ILS/CLS

An entire ILS/CLS approach takes about 2 minutes and many events happen during this time. An approach to landing can be as intense as a close quarter dog fight. Approaches require sharp pilots who can anticipate every event and fly with much finesse. This section provides some pointers on performing successful ILS/CLS approaches. The ILS/CLS landing checklist presents much of this same information in a simplified form.

PRE APPROACH

Since all approaches begin from the Initial Approach Fix (IAF), you must first navigate to this waypoint. Place your HUD in navigation mode by pressing **[N]**. "NAV" appears in the HUD's lower left corner. Use **[N]** or **[Shift-N]** to cycle through waypoints until "IAF" appears in the HUD's lower right corner. Fly towards the IAF as you would any other waypoint.

When you are between 20 and 30 miles from the IAF, configure your aircraft for landing. Extend your gear and arrestor hook by pressing **[G]** and **[A]**. (The arrestor hook is only necessary for carrier landings.) Turn the pitch ladder on by pressing **[L]**. Use the pitch ladder to establish specific pitch and bank angles making for a more precise approach. The ILS display automatically appears when you extend the gear and arrestor hook. For ground landings, you need not extend the arrestor hook.

BEGINNING THE APPROACH

As you near the IAF pay special attention to your altitude. Approaching this waypoint at the correct altitude assures proper glide slope interception. By keeping the velocity vector EXACTLY in the center of the waypoint designator (the hollow triangle in the HUD's center), you will fly a direct course to the waypoint.

Three miles before the Initial Approach Fix perform these three tasks simultaneously:

- Set the power to 34% (by pressing **[3]** once and **[+]** four times)
- Select the FAF waypoint **[N]**
- Immediately turn towards it using a steep turn (45° to 90° of bank).

Many beginners get lost at this point. Simplify your turn towards the FAF by following these simple guidelines:

First, check the map display **[M]** before you are 1.0 mile from the IAF waypoint. The IAF, FAF, and carrier (or airport) waypoints appear as green dots on the map. Determine where these waypoints lie with respect to your flight path so you know which direction to turn when the time comes.

Second, after looking at the map consider re-aligning for the approach if turning from the IAF to FAF waypoint requires a large heading change (i.e. 180°). Large heading changes result in larger turns. Large turns cover more area over the ground. A 180° turn would grossly misalign the approach unless it were an extremely steep bank turn (thereby tightening the turn's radius).

Third, as you roll wings level toward the next waypoint (FAF) begin looking for the landing strip. The navigation director triangle points directly at the carrier when you select the CVN waypoint. If you are landing at a ground runway, the triangle points to the runway when you select the airport's waypoint.

TRACKING THE LOCALIZER AND GLIDE SLOPE

As soon as you roll wings level verify three conditions:

- You are heading in the general direction of the carrier (or airport).
- The glide slope indicator is approximately centered.
- The localizer lies slightly to your left or right (as indicated by the CDI).

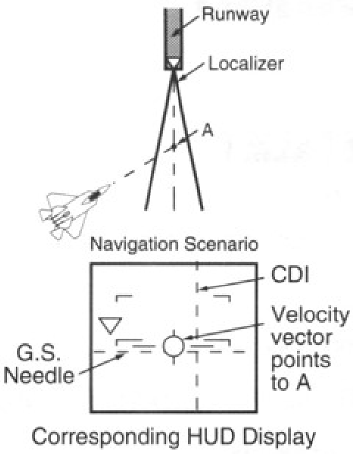
Remember to pay attention to two CDI characteristics: direction and magnitude of deflection. The direction of deflection indicates the direction to the localizer (when viewed from a bird's eye perspective looking toward the runway). The magnitude of CDI deflection indicates your distance from the localizer's centerline.

Correct toward the localizer and glide slope as soon as you determine where they are. These corrections, like all corrections from here on in, should be subtle and precise; nearly all beginners over-correct. The localizer and glide slope are more sensitive than waypoints. Therefore, people tend to "overshoot" their desired course.

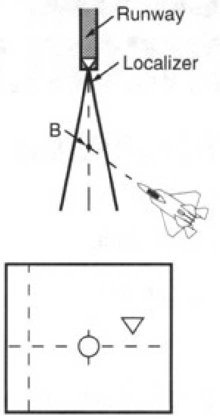
Avoid over-corrections by following three guidelines:

- First, make small shallow turns using only the rudder (**[X]** and **[Z]**). Ailerons are great for steep tight turns, but making small heading changes using rudder and ailerons is more difficult. Only use the ailerons to keep your wings level.
- Second, use the navigation director while making corrections toward the localizer's centerline. The waypoint triangle (in the center of the HUD) always points at the landing point when the CVN or airport waypoint is selected. Furthermore, the CDI always deflects toward the localizer. Therefore, you will always be approaching the localizer if you place the velocity vector between the CDI and the CVN waypoint. The following picture illustrates why this works.

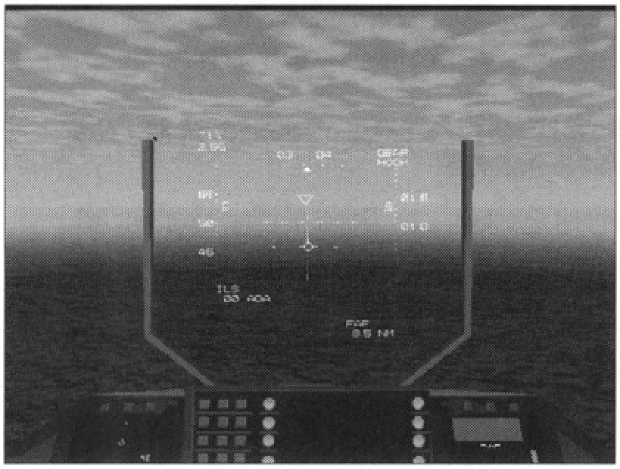
Correcting to the Left


Runway
Localizer
A
Navigation Scenario
CDI
Velocity vector points to A
G.S. Needle
Corresponding HUD Display

Correcting to the Right

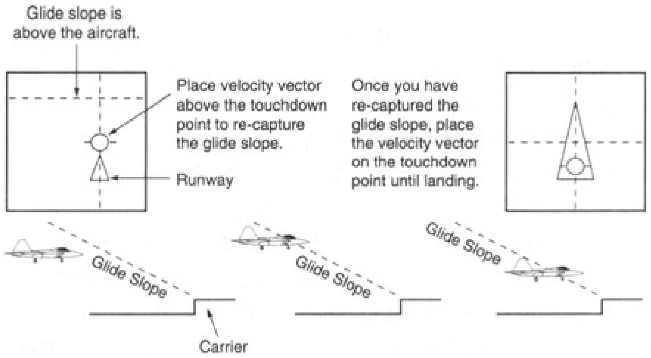

Runway
Localizer
B

- Third, use the velocity vector, airspeed, angle of attack, pitch, and/or descent rate information while tracking the glide slope. Obviously, you cannot use all of this information simultaneously. Experiment and see what combination works best for you. Of this list, your single most valuable tool is the velocity vector.



Since the velocity vector displays your direction of travel, you can simply place it on the point where you want to go—like the touchdown point on the runway. However, if you are off course (i.e. the CDI and glide slope indicator are not within the OFF COURSE INDICATOR) you must correct your course.

For example, if you are below the glide slope, place the velocity vector above the touchdown point until the glide slope indicator re-centers in the OFF COURSE INDICATOR. Likewise, if you are too high (the glide slope indicator is below the OFF COURSE INDICATOR), place the velocity vector below the touchdown point. Once the glide slope indicator centers, place the velocity vector back on the touchdown point.


Glide slope is above the aircraft.
Place velocity vector above the touchdown point to re-capture the glide slope.
Runway
Once you have re-captured the glide slope, place the velocity vector on the touchdown point until landing.
Glide Slope
Glide Slope
Glide Slope
Carrier

At 34% power, the following configuration results in an approximate 3° glide slope (the angle at which the glide slope approaches the ground):

Airspeed: ....approx. 165 KIAS

AOA: ....4° to 6°

Pitch:.............................approx. 0°

VSI: ....approx. -24 F/S (-1440 FPM)

You don't need to monitor and maintain each parameter independently; by achieving any one of them you necessarily achieve them all (once the aircraft stabilizes). Also, once you "capture" the glide slope, simply placing the velocity vector on the touchdown point keeps you on course and only a few minor pitch adjustments will be necessary. This is only true at 34% power.

If you ever stray from the desired glide slope (the glide slope indicator is not within the OFF COURSE INDICATOR), you can pitch up or down to re-capture it. However, the configuration outlined above pushes your aircraft to the edge of its performance envelope. Hence, abrupt or excessive control movements induce a stall. Make small, slow corrections while mending your course.

If you stray excessively far above or below the glide slope, momentarily adjust your power (increase to climb, or decrease to descend) or perform a missed approach. A missed approach entails aborting the current approach and re-setting for another attempt.

Approaches are identical whether you are landing on the ground or carrier. However, the landings differ slightly.

GROUND LANDINGS

Ground landings are more simple than carrier landings. Cut the power about 0.3 miles before touchdown **[~]**. As the engine spools down (almost immediately), add a SLIGHT amount of joystick back pressure to initiate a flare. A flare is the transition from flight to ground operations. Ideally, it begins about 70 feet above the runway and continues until touchdown. Throughout a flare your pitch should be slowly and smoothly increasing while your descent rate and airspeed diminish. By the time you touch down, you should be at a pitch that allows your main landing gear (the two back tires) to touch the ground before your nose gear. Perform a flare by momentarily pressing **[Numpad 2]** or GENTLY pulling back on the joystick. After touchdown apply the wheel brakes **[B]** and slow to a stop. Use the rudder pedals to steer (**[Z]** and **[X]**). Once you perfect ground landings (see training mission #8) it's time to move onto carrier traps (training mission #9).

CARRIER TRAPS

Rough seas, the carrier's motion, and the deck's length make carrier traps one of your most difficult tasks as a JetFighter III pilot. Ideally, your arrestor hook will trap the third arresting cable. This means that the arrestor hook actually snags the cable stretched across the landing strip. Unfortunately, bolters often happen instead. A bolter occurs when the arrestor hook fails to snag one of the cables stretched across the carrier's deck. Bolters happen for many reasons including improper runway alignment or faulty equipment.

Unlike ground landings, do not flare! Strange as it seems, pilots fly right into the deck during carrier landings. A flare would sacrifice valuable airspeed and deck space. Also, hitting a specific landing point (i.e. the third arresting cable) is easier without a flare.

Prepare for bolters on every approach (even on perfect approaches) by applying full afterburner **[\]** about 1,000 feet before touchdown. The afterburner allows you to maintain enough speed for flight in case a bolter occurs. If you trap the arresting cable, cut the power **[~]**; otherwise apply full power and reset for another approach.

It will take some practice before your landings are beautiful, but the thrill of your first successful landing will make it all worthwhile.

ILS/CLS LANDING CHECKLIST

PRE-APPROACH CHECKLIST

Landing Gear: .... Extend **[G]**

Arrestor Hook: .... Extend (for carrier approaches) **[A]**

Pitch Ladder:.......... ON **[L]**

HUD mode:............ Navigation mode **[N]**

Waypoint Selection: .. press **[N]** until "IAF" appears in the HUD

IAF WAYPOINT CHECKLIST—PERFORM 1 MI BEFORE WAYPOINT

Power: .... 40% - 42% (press **[4]**, then **[+]** zero to two times)

Waypoint selection: .. Select FAF waypoint (**[N]** or **[Shift-N]**)

Turn: .... 45°-90° bank turn toward FAF waypoint

ILS/CLS: .... Align with localizer's centerline, maintain glide slope

FAF WAYPOINT CHECKLIST—PERFORM AT LEAST 1 MI BEFORE FAF

Waypoint selection:...... Select terminal waypoint **[N]**

Velocity Vector: .... On touchdown point

Pitch: .... 0° - +3°

Airspeed: .... approx. 200 KIAS

AOA: .... 4° to 6°

VSI:...................... approx. -30 F/S

TOUCHDOWN CHECKLIST—CARRIER APPROACHES

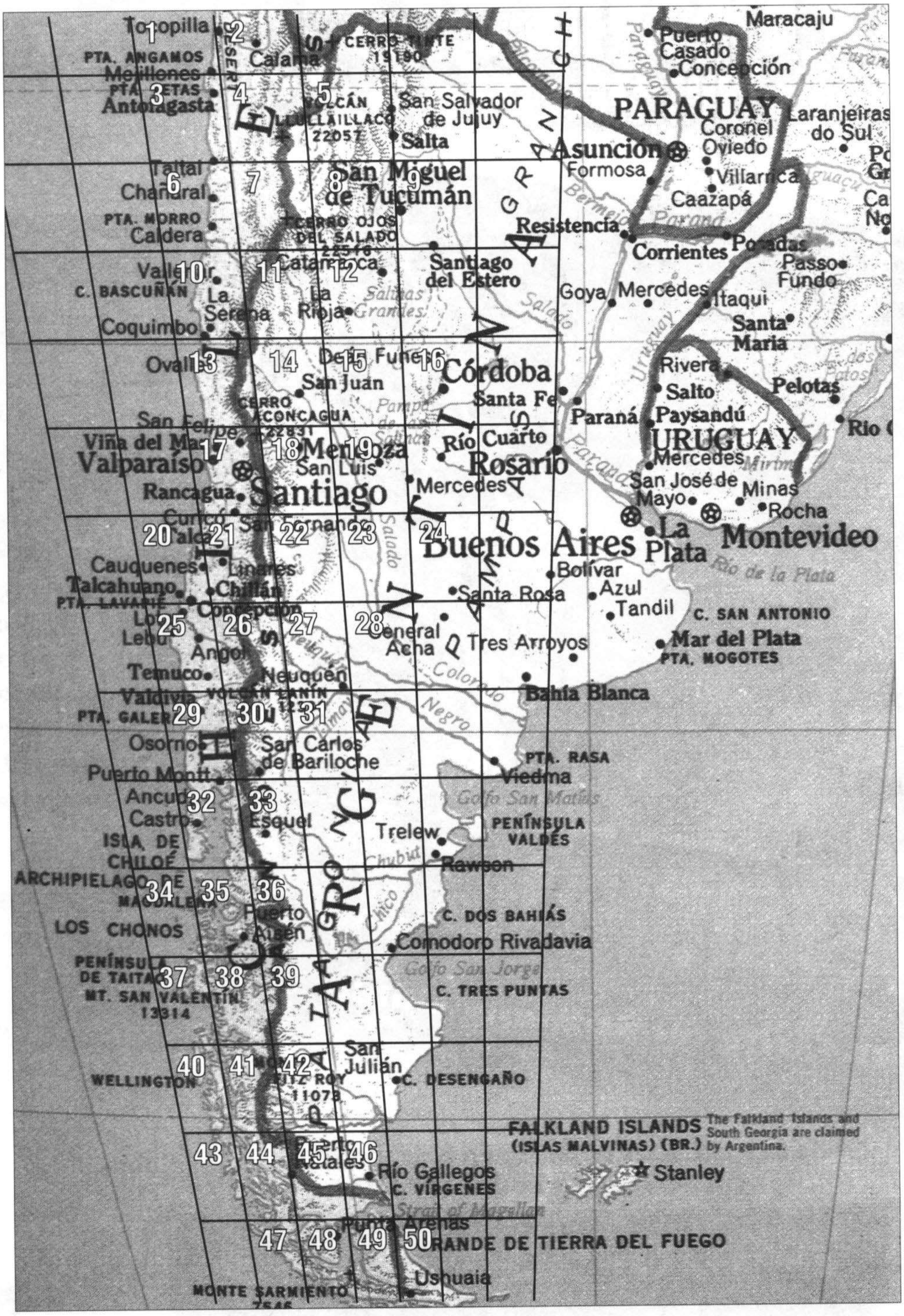
Power (1,000 feet before deck):........ Full Afterburner **[\]**

Power (trap): .... 0% **[~]**

TOUCHDOWN CHECKLIST—RUNWAY APPROACHES

Power (1,000 feet before touchdown zone): ...... 0% **[~]**

ARGENTINA CAMPAIGN SECTOR MAP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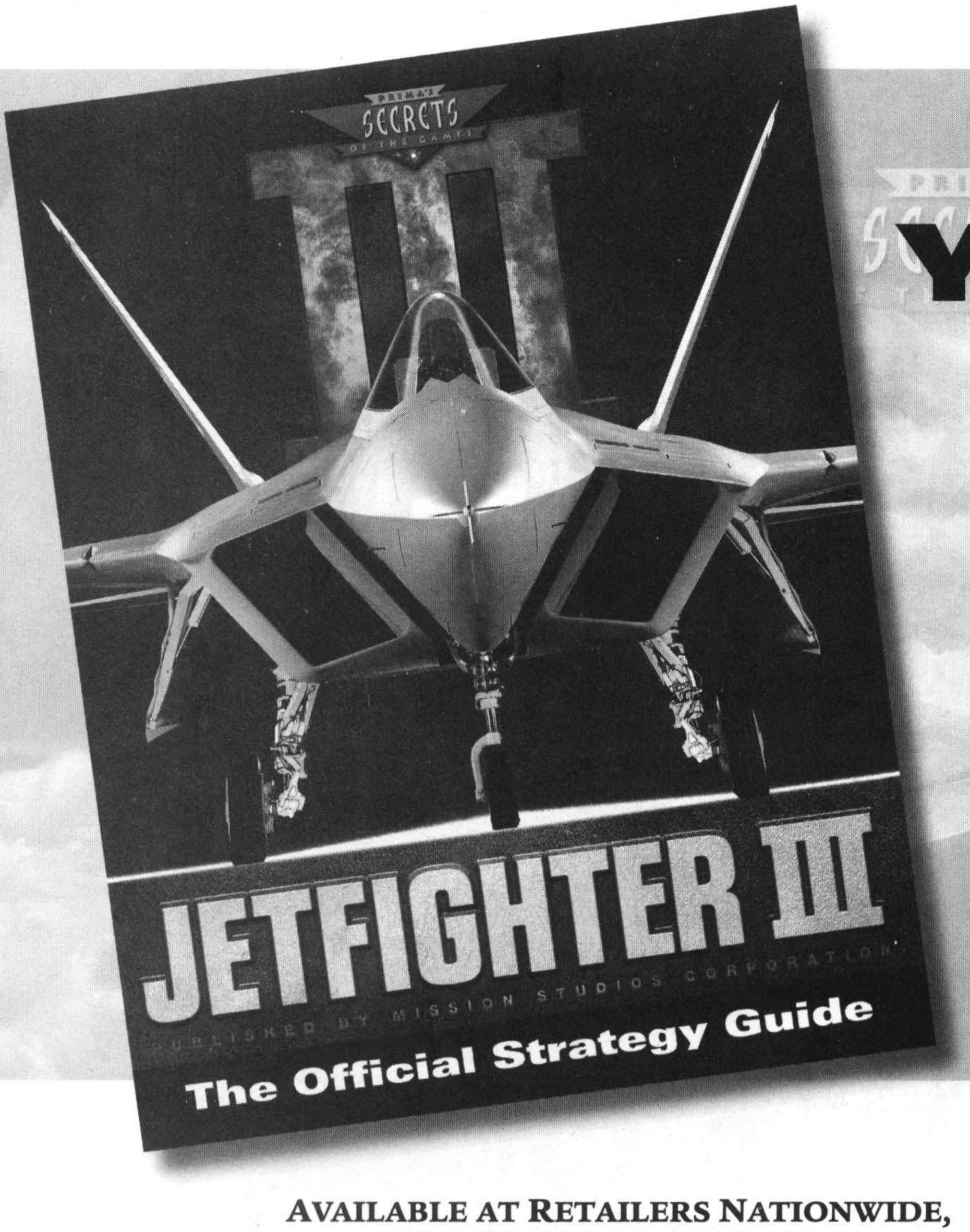
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